Chapter 5 – Project Management

Table of Contents

References

(a) Joint Fleet Maintenance Manual (JFMM)

(b) NAVSEAINST 5000.5, Ship Project Directive Systems

(c) NAVSEAINST 5400.60A, On-Site Program Management Representatives (PMR)

(d) Navy and Marine Corps Acquisition Regulations Supplement (NMCARS)

(e) NAVSEA Contracts Handbook

(f) Federal Acquisition Regulations (FAR)

(g) Defense Federal Acquisition Regulations Supplement (DFARS)

(h) NAVSEA 0905-485-6010, “Manual for the Control of Testing and Ship Conditions”

(i) NAVSEA S9086-7G-STM-000/CH-997, “Docking Instructions and Routine Work in Drydock”

(j) SECNAVINST 5031.1B, Ship Naming, Keel Layings, Christenings, Commissionings, and Decommissionings

(k) NAVSEAINST 4130.12B, Configuration Management (CM) Policy and Guidance

(l) TMIN-SL130-AB-GYD-010/CMP, “Configuration Management Guidance Manual”

(m) MIL-HDBK-61A, “Configuration Management Guidance”

(n) Occupational Safety and Health (OSH) Act of 1970

(o) 29 CFR Part 1915

(p) 10 U.S.C. 2433, Nunn-McCurdy Act

Figures

Chapter 5 – Project Management

5.1 General

This chapter discusses Project Management in support of Program Management for ship and small craft construction projects, as well as conversion projects. The SUPSHIP Project Office and the designated project team are the focal point in the command for their assigned new construction/conversion project(s) and the associated contract(s). The Regional Maintenance Centers (RMCs) have assumed responsibility, within their geographic region, for all ship maintenance work contracted for accomplishment by commercial shipyards. For those SUPSHIPs which retained both new construction and repair capability, their repair functions shall conform to the provisions of Volume VII of reference (a), the Joint Fleet Maintenance Manual (JFMM).

5.1.1 Program Management in Ship Acquisition

For the purpose of ship acquisition, Program Management refers to the functions and responsibilities associated with the acquisition of an entire class of ships. The Program Manager (PM) is the individual with overall life-cycle responsibility, commencing with concept development of the Congressionally-approved acquisition program, including management of funds and administration of the multiple functions associated with development of the performance requirements, definition of specifications and award of contracts, contract design, detailed design, construction, deployment, operational sustainment of the class, and ultimately disposal. The PM reports to the Program Executive Officer (PEO) who is responsible for multiple acquisition programs. SUPSHIPs are primarily involved with PMs reporting to PEO Ships, PEO Carriers, and PEO Submarines. The Navy has a total of fourteen PEOs overseeing various categories of acquisition programs (see PEO Structure).

5.1.2 Project Management in Ship Acquisition

Project management within the SUPSHIP refers to the day-to-day management of construction projects for ships and small craft assigned to the Supervisor of Shipbuilding (Supervisor). The assignment may commence as early as concept development in support of tasking from the Program Manager. The Supervisor works with NAVSEA 04Z and the PM to determine the manning requirements and available SUPSHIP resources to staff the SUPSHIP Project Office. The PM may provide additional staffing to augment the SUPSHIP Project Office, or may fund SUPSHIP to provide additional personnel for performance of work that falls outside the scope of the SUPSHIP mission (see Chapter 4, section 4.7.3.1). A SUPSHIP may have multiple project offices depending on the number, complexity and type of ship classes.

NAVSEA 02 may structure a contract so that the acquisition process for specific programs can exercise multiple option phases. Acquisition strategies are often solicited and awarded as concurrent design/construct contracts. These contracts create unique requirements for manning the SUPSHIP and staffing the project management team. For example, in

design/construction contracts, the initial phases will require that the majority of manpower consists of a design team comprised of naval architects and engineers. As the design matures and the contractor commences production, design team manpower will be reduced, and the project office will be augmented by production controllers who progress the construction phase. The construction team will include a blending of multiple functions from all SUPSHIP departments and augmentation by PM staffing.

5.2 Typical Project Office Organization

5.2.1 General

The project office is in effect a "business center" within the SUPSHIP that is led by an assigned Project Officer. The multi-functional project team members provide their unique professional knowledge, skills and abilities to assess the technical completeness of the specifications and in observing the contractor's technical compliance with the terms and conditions of the contract. The project team may be called upon during the planning phase and pre-award processes to work closely with the Procuring Contracting Officer (PCO) for pre-contract award actions. Following award, the Project Team will support the Administrative Contracting Officer (ACO) with assigned contract administration in accordance with the mission of the SUPSHIP. Additionally, the Project Office is accountable for on-site program administration and management in accordance with agreements between the Supervisor and the Program Manager. Reference (b), NAVSEAINST 5000.5, "Ship Project Directive Systems," states that the PM is to provide a Ship Project Directive (SPD) that serves as a documented record of negotiated agreements between the PM and other activities. In the absence of an SPD, the Supervisor will initiate a Memorandum of Agreement (MOA) that identifies the mission functions that will be available for administration of the contract and will pursue resolution of any non-mission requirements that are being requested by the PM. NAVSEA 04Z will mediate issues where there is no bilateral agreement with the SPS or a MOA.

The following paragraphs describe typical project office positions, functions and responsibilities. These may vary significantly due to PM requirements and SUPSHIP organization.

5.2.2 Project Officer/Program Manager's Representative (PMR)

The Project Officer/Program Manager's Representative (PMR) serves as the on-site manager for the PM and leads the SUPSHIP Project Office. In accordance with reference (c), NAVSEAINST 5400.60A, "On-Site Program Management Representatives (PMR)," the PMR reports directly to the Program Manager and administratively to the Supervisor. The PMR's responsibilities may extend to oversee and advise the PM on the progress of off-site contracts related to the assigned ship construction project(s). Typical duties and responsibilities of the PMR include:

a. Serve as the primary SUPSHIP point of contact for program matters, which may include participation in advanced procurement actions and the management of pre-construction/pre-award requirements tasked to the SUPSHIP.

b. Oversee the performance of the Project Office.

c. Maintain familiarity with the requirements of the contract and assist the ACO in determining contractor compliance with the terms and conditions of the contract.

d. Maintain liaison and coordinate actions with the PM, SUPSHIP departments, Fleet customers, pre-commissioning crew/ship's force, and contractor.

e. Coordinate emerging requirements for planning, scheduling and estimating associated with contractor proposals, engineering change proposals, preparation of Technical Advisory Reports (TARs), and resolution of design and specification issues, including supporting the requirements of the Chief Engineer in complying with the responsibilities as a Technical Warrant holder.

f. Schedule and coordinate SUPSHIP and contractor participation in meetings and conferences, including program status reviews and production and technical review meetings.

g. Monitor contractual requirements versus compliance and evaluate physical work progress versus contractor’s Earned Value Management System (EVMS) to identify and take actions that could prevent or minimize problems that could affect cost, quality, schedule, and performance of the contract. Focus SUPSHIP and contractor management attention to resolve these problems.

h. Assist the ACO in monitoring the contractor’s performance and accuracy of the information in the EVMS.

i. Direct the preparation of reports on current status of assigned contract.

j. Support the Total Ship Test Program, preparations for and execution of trials and the Board of Inspection and Survey (INSURV) inspections, and the transitioning of the ship from construction to active fleet duty.

k. Coordinate the preparation of the DD Form 250 with the contractor for accepting delivery of the ship, including the listing of all outstanding incomplete work.

l. Make recommendations to the ACO and PM on the value of the incomplete work to aid in determining the amount of retentions against the contract.

5.2.3 Deputy Project Officer/Deputy Program Manager’s Representative

The Deputy PMR is assigned by the Supervisor and reports to the Project Officer /PMR and acts in that capacity when the principle is absent. The Deputy provides continuity in the

Project Office over the life of the construction effort and interfaces with the other departments in the SUPSHIP to obtain the necessary staff support and other resources that are required to meet the responsibilities assigned to the project office.

5.2.4 Project Engineer

A Project Engineer is assigned to the project office as a direct representative of the SUPSHIP Chief Engineer. This person manages the daily routine of resolving emerging technical issues and reviewing technical information and data that is being provided or requested by the contractor relative to a specific hull construction project. Additionally, this position requires the engineer, when appropriate, to assess and forward information and data that has potential application in the construction of other hulls.

5.2.5 Production Officer

The Production Officer is tasked to interface with and monitor the contractor's production processes and progress as construction proceeds. Typically, there are SUPSHIP personnel with specific production trade skill experience assigned to support the Production Officer and who interface with the production workforce on the "deck plates" in assessing compliance with contract specifications and physical work progress. Personnel who are interfacing directly with the production effort provide their expertise to identify and call out specific non-compliant performance and assist the Production Officer, Project Officer and ACO in evaluating physical progress versus the contractor's EVMS.

5.2.6 Total Ship Test Director

The appointment of the Local Total Ship Test Director (LTSTD) is approved by the Supervisor. Composition of the SUPSHIP/PM Test Team (STT) varies depending on the test program size, availability of personnel, and tasking to other government organizations from the PM. The PM may assign a Program Office Test Director. In addition to the STT, all personnel coming to the shipyard to perform test program work come under the control of the LTSTD, even though they are not attached to the SUPSHIP. The LTSTD is typically supported by a Local Combat Systems Test Director (LCSTD) and Local Ship Systems Test Director (LSSTD). There may be other supporting test staff depending upon the scope of the test program. In general, the SUPSHIP/PM Test Team will administer all aspects of the government and contractors waterfront test program. A PM may assign a Program Office Test Director to serve in this capacity. A detailed discussion to the Test and Trials Program is contained in Chapter 10 of this manual.

5.2.7 Ship Superintendent

When assigned, the primary function of the Ship Superintendent is to assist the Project Officer, support the project office team, and liaison on the waterfront with both government representatives from other activities plus the contractor's management team. The Ship Superintendent is often a military person, but may be civilian, and is frequently assigned to

the position in order to gain on-the-job training and experience in ship acquisition and project management. Typical duties and responsibilities of the Ship Superintendent include:

a. acting as the primary point of contact for the pre-commissioning crew/ship's force

b. representing the on-site team at briefings to the PMR and Supervisor

c. representing the on-site team with other military organizations and inspection teams

d. reviewing government and contractor reports and providing appropriate comments

e. coordinating assigned inspection teams

f. coordinating the preparation for equipment light-off and any Light-Off Examinations (LOE) or Light-Off Assessments (LOA)

g. coordinating PEO and Technical Authority prescribed tests and trials

h. coordinating government responsibilities for trials and serving as the POC for the Board of Inspection and Survey

i. maintaining a record of Significant Events in accordance with reference (d), NMCARS 5233.90, and reference (e), NAVSEA Contracts Handbook (NCH) Part 33.90 (see Chapter 3, section 3.13.14.1.1)

5.2.8 Other SUPSHIP Functions that Support the Project Office

The project office is supported by other SUPSHIP functions either directly or in a matrix organization capacity. Department heads and the project officer develop the manning requirements for the project office.

5.2.8.1 Production Controller/Industrial Specialist (Shipbuilding)

The Production Officer or Production Manager may be assisted by a Supervisory Production Controller who manages and coordinates the efforts of the Production Controllers assigned to support the project office. Production Controllers are personnel with a specific trade or technical skills background. Team assignments are made to balance trade expertise for the assigned project. Production Controllers are expected to perform as experts in the areas assigned and to act as decision makers with comprehensive knowledge of each work item assigned. Typical assignments may include the following duties and responsibilities:

a. Provide current information relating to assigned work items to the Production Officer/Manager and PMR when a Supervisory Production Controller is not assigned to oversee the project.

b. May be required to utilize their technical expertise to:

(1) Resolve production issues that are within their technical assignments

(2) Develop scope of work requirements

(3) Receive and respond to contractor reports

(4) Develop Government's technical response and request engineering support

(5) Support the preparation of TARs and assist the ACO as requested in Government negotiations

(6) Prepare Government estimates, including delay & disruption factors

(7) Prepare contract modifications

(8) Assess contractor performance, work progress, and capabilities

(9) Accomplish random in-process inspections at worksite

(10) Attend meetings to provide comprehensive information and to remain current in all aspects of the project

(11) Identify and initiate action to correct, prevent, and minimize delays and resolve problems that affect quality, schedule, and contractor performance

(12) Assist in claims avoidance and claims resolution

(13) Manage Contract Change funding for each specific ship construction or availability

(14) Process and maintain files for all deferred work and deferral requests for each ship

c. Interface with Fleet representatives and pre-commissioning crew to provide current project information, notify personnel of scheduled evolutions, and provide technical advice.

d. Monitor the GFM and CFM reports to identify and help mitigate late material delivery dates. Some of this function may be provided by FISC but the PMR is still responsible and should have a tracking process in place.

e. Assist in managing contract guarantee work, including determination of Government or contractor responsibility and coordinating correction of deficiencies.

f. Provide lessons learned and feedback related to deficient or inefficient work specifications or work authorizations to the appropriate PCO for use in improving future procurements.

g. When assigned, conduct safety inspection jointly with the contractor, pre-commissioning crew, and SUPSHIP supervisor. Report any significant contractor violation of safety and

environmental compliance requirements to the Manager for Environmental, Safety and Health.

h. Maintain a Significant Events Log.

5.2.8.2 Environmental, Safety and Health (ESH) Specialists

Environmental and safety specialists are assigned either full or part-time to monitor contract compliance in these areas. Duties and responsibilities include:

- Monitor and report contractor compliance with safety and environmental requirements, both those imposed by the contract and those established by Federal, state, and local regulations.

- Perform safety walk-through inspections of worksites where Government personnel may be present and report deficiencies to the contractor's representative, and when applicable, the appropriate PCU or ship's force personnel.

- Perform investigations and document facts associated with safety and environmental incidents and assist representatives from the Navy or OSHA in their investigations.

- Report to the ACO and SUPSHIP Manager for Environmental, Safety and Health when contractor action or inaction has resulted in a safety or environmental incident, or when appropriate action is not being taken by the contractor to resolve safety or environmental deficiencies. This may include preparing Safety or Environmental Corrective Action Reports (CAR) in accordance with Chapter 9, "Contract Administration Quality Assurance Program," and Chapter 12, "Environmental, Safety and Health," where there are significant recurring or systemic problems in the contractor's ESH Program.

NOTE: All SUPSHIP personnel are obligated to report any accident or incident that results in personnel injury or damage to Government property to the SUPSHIP Manager for Environmental, Safety and Health. SUPSHIP personnel must also report any significant or willful contractor violation of safety and environmental regulations, and are authorized to stop contractor work that poses an immediate and unacceptable risk to personnel or equipment. Any action to stop contractor work should be reported immediately to the SUPSHIP Manager for Environmental, Safety and Health and the ACO.

5.2.8.3 Waterfront Engineer

When assigned by the Chief Engineer, the Waterfront Engineer's duties and responsibilities include, but are not limited to:

- coordinating requests and monitoring the status of requests for SUPSHIP design assistance

- arranging for engineering assistance to investigate the identified problems and providing engineering guidance

- supporting the Chief Engineer in exercising responsibilities and accountability as the designated Technical Warrant Holder, including resolution of engineering issues within the contract and in obtaining assistance from NAVSEA 05

Chapter 8 provides further information on Waterfront Engineering and Technical Authority.

5.2.8.4 Local Combat Systems Test Director (LCSTD)

The Combat Systems Manager, sometimes referred to as the Combat Systems Representative, serves much the same role as a Production Controller. Because of the complexity of combat systems suites, and because they are often procured through contracts that are not under SUPSHIP cognizance, the Combat Systems Manager plays a more active role in coordinating the activities of other contractors and the Government activities involved in the installation and testing of these systems. In addition to those listed for Production Controllers, the Combat Systems Manager's duties and responsibilities include:

- Coordinate the activities of contractors and Government activities involved in the fabrication, installation, and testing of the combat systems suites.

- Write and receive answers to a design Liaison Action Request (LAR) and provide interim answers to Test Problem Reports.

- When assigned as the SUPSHIP Combat Systems Test Director, serve as the primary point of contact for technical issues with the Naval Surface Warfare Center-Port Hueneme and Space and Warfare Systems Command.

- When designated, serve as the SUPSHIP Local Combat Systems Test Director (LCSTD) in support of the SPD and Total Ship Test Program as described in 10.5.1.2.

- Contribute to the Significant Events Log.

5.2.8.5 Quality Assurance (QA) Specialist

The Quality Assurance (QA) Specialist provides project oversight of the contractor's Quality Management System as required by the contract. This consists of performing the following SUPSHIP responsibilities, often with the assistance of other SUPSHIP QA Department personnel, for the Project Management Team's assigned work (see section 9.3 for more detailed information):

- Document reviews

- Procedure Evaluations

- Product Verification Inspections
- Quality Audits
- Submitting and managing Corrective Action Requests (CAR) and responses
- Quality Data Evaluation

5.2.8.6 Integrated Logistics Support Manager

The Project Officer, working with the designated Fleet Industrial Support Center (FISC), will define the requirement for additional personnel to monitor the GFM, CFM and provisioning technical data where required to support construction schedule.

Chapter 14, “Integrated Logistics Support,” provides additional information.

5.2.8.7 Government Property Administrator

The Government Property Administrator, designated in writing by the Supervisor, is responsible for monitoring, controlling, and recording the disposition of Government property for the assigned project. Duties and responsibilities include:

- screening contract specifications, terms and conditions to determine the contractor's responsibility regarding Government property
- administering receipt inspection and distribution of all Government property related to the contract
- approving the contractor’s material receipt and inspection process, including GFM, CFM, and material removed from the ship by contract requirements
- providing disposition instructions for salvage and scrap material

Generally, the contractor is responsible for the proper care and protection of all Government property in the contractor's custody. The contract will not be closed until the contractor has accounted for all Government property or the Government has received acceptable consideration. Property Administration is discussed in detail in Chapter 11.

5.2.8.8 Comptroller Personnel

The Comptroller assigns specific accounting responsibilities to an individual who is knowledgeable in the type of funds and cost codes applicable to the project. The project’s designated representative of the comptroller is the only official source for obtaining a balance for a given account. Designated Funds Administrators (in writing) should therefore establish a close working relationship with the representative that is responsible for project funding status. Refer to Chapter 4, “Financial Management,” for further information.

5.3 Project Officer/PMR and ACO Interface

It is imperative that the Project Officer, the project office, and the assigned ACO and Code 400 support staff establish effective and efficient working relationships and communications that meet the requirements of both responsible and accountable positions. Each of these activities is interdependent on the other, and the overall success of the program can rest on how well they interact with each other, and with the contractor.

The Contracts Department Head, Code 400, is the Chief of the Contracting Office (CCO) and the senior warranted contracting officer responsible for day-to-day ACO functions performed by warranted contracting officers within the department. The assigned ACO is the only on-site government representative that can change the terms and conditions of the contract or obligate the government for work beyond the requirements of the contractual specifications. The project office team provides “deck plate” surveillance, liaison and coordination of the contractor to assure compliance with the terms and conditions of the contract and provide technical and project management support to the Project Officer and ACO. To assist the ACO, SUPSHIP personnel with specialized technical backgrounds and appropriate qualifications may be assigned as a Contracting Officers Representative (COR). See Chapter 3, “Contracting and Contract Administration,” for detailed information concerning the scope of authority and responsibility of the ACO and an assigned COR.

5.3.1 Documenting Significant Events/Claims Avoidance by the Project Office

NMCARS 5233.90 requires that SUPSHIP personnel involved in contract administration maintain a record of significant events in order to provide a means for verifying, quantifying, or refuting matters related to a contractor claim (see section 3.13.4.1.1). This documentation is required for all contracts either in excess of $5 million or for which a claim is expected. The significant events records may include correspondence, meeting minutes, labor records, material purchase orders, project schedules, schedule updates, productivity data, and project monitoring information or any other information that will form the basis for asserting or rebutting a claim.

The Contracting Officer will specify to the Project Management Team the requirements for maintaining a "Significant Events" file. All Government personnel involved in the performance of a contract should maintain a real time record of significant events that occur during the contract period. Significant events are personal observations of conditions or actions by or to any party to the contract which may affect the performance of the contract. Having this "Significant Events" file and related documentation allows the Government to support or refute claims, terminations of contracts, settlements, and determinations, or to provide evidence for litigation or investigations. They also include written records of deficiencies in work progress and accomplishment.

5.4 Project Office Functions

5.4.1 Contractor Liaison

Personnel assigned to the SUPSHIP Project Office or who are in a matrix support function liaison with contractor personnel under various circumstances during the overall acquisition processes. This interaction occurs from pre-award through termination of the SCN funding cycle. The interfaces may involve both technical and programmatic matters that must be addressed during scheduled and emergent meetings, technical data and drawing reviews, production plus quality assurance oversight, total program status reviews, testing and trials, resolution of non-compliant deficiencies, and the necessity to resolve issues that have the potential to impact cost, schedule or terms, and conditions of the contract. At the commencement of the project, once points of contact within the respective organizations are identified for each technical area, trade discipline and administrative function, both the Government and contractor project teams must maintain a strong communications link and sustain the dialog until the final invoice is paid.

5.4.2 Action Item and Correspondence Management

Command policies for processing action items shall be in place to assure that the SUPSHIP management information system is responsive to the requirements from each Project Office and the ACO. One key component of the Project Office information management system must include a database that contains a listing of all project-related action items by source and date of receipt from either the government or contractor sources, identifying the internal and external person/organization that is designated/responsible for assuring resolution of the item, tracking the status of each item, and defining the date and corrective action that resolved the issue. This function is fulfilled by the Technical Support Management System (TSM). There are numerous sources that can generate a requirement for action that include correspondence involving contractual matters, a corrective action report (CAR), an Engineering Change Proposal (ECP), Test Change Report (TCP), Test Problem Report (TPR), and an INSURV Trial Card, to name a few. The policy should include the requirement for frequent reviews by senior management to monitor the status of outstanding action items.

5.4.3 Project Office Interface with Overall Acquisition Process

The PM, with agreement by the Supervisor via an SPD or MOA, often incorporates the project office into the acquisition plan to support the pre-award advance planning process for the ship construction program as well as utilizing their services following award for administering the contract. The Project Officer and assigned team should participate to the maximum extent possible in the early stages of the program development as they bring critical information and professional skills to the planning group, and they are the most familiar with the past performance and existing capability of potential contractors. All knowledge gained about the acquisition program prior to award is invaluable to the project management team during the contract administration and construction execution phase.

5.4.3.1 Milestone and Schedule Management

The PM will establish the baseline milestone events in the Acquisition Plan that accommodate the typical acquisition cycle and that can be used by the Government and contractor in defining the milestones for the project after contract award. Detailing milestones associated with the design and construction process is one management tool that requires significant advanced planning and in-depth knowledge of the overall sequence of events from contract award through acceptance of the ship and signing of the DD 250, up to the SCN funding Obligation Work Limiting Date (OWLD). The Project Office must be aggressively involved in progressing and monitoring the contractor's success in achieving the designated milestones and, in particular, key or critical path milestones that have the potential to impact cost and schedule. Management of milestones through the project management system assists in evaluating the contractor's performance and can be applied to incentive fee and award fee type contracts, as well as evaluating the potential critical path work.

Some contracts are managed and progressed based on attainment of payable milestones and the ACO may request that the Project Office verify that a specific milestone has been satisfactorily completed prior to the SUPSHIP authorizing DFAS to execute payment of the contractor's invoice. Contracts utilizing payable milestones provide additional leverage in validating physical progress relative to the contractor's EVMS.

The contracts for ship construction contain a Scheduling Clause that requires the contractor to submit an Integrated Master Schedule (IMS) that is resource loaded and to provide periodic schedule updates to the Project Office. Because of the dollar value of ship construction contracts, shipbuilders are also required to employ an Earned Value Management System (EVMS) that conforms to the industry standard (ANSI/EIA-748). The project office utilizes the contractor's EVMS as a tool to evaluate contract performance in terms of both cost and schedule adherence. Chapter 7 discusses EVMS in greater detail.

The contractor may have developed the best possible schedule and cost accounting system, EVM system, with input from various specialists regarding activity content, sequencing, an activity's duration, and manning estimates, but unless the project's performance is measured against the schedule and budget, you will never know where the project is and – most importantly – where it is going. Even with an approved EVM system, it is still a requirement that the SUPSHIP tracks actual physical progress against planned physical progress. Refer to section 5.5 below.

If it becomes apparent to the Project Office that the contractor is falling behind schedule, the SUPSHIP should apprise the contractor of this fact and request remedial action. The contractor should be informed of this fact sufficiently in advance of the scheduled completion date to permit remedial action. Additionally, Project Office and other Government representatives should be as cooperative as possible to assist the contractor in recovering the schedule.

Although the type of corrective action will often depend on the cause of the schedule slip, some common remedies which may be available to the contractor include:

- Multi-shift work
- Overtime
- Increasing workforce assigned to project
- Re-sequencing project activities

SUPSHIP must also consider if action or inaction on the part of the Government may have contributed to the schedule slip. This includes actions by the Pre-Commissioning Unit or ship's force that may have unduly interfered with the contractor's work. For this reason, the Project Office should notify the contractor of Government-endorsed events that may be disruptive and not previously accounted for in the schedule. The notice should be provided as far in advance as possible in order to mitigate the impact on the contractor's schedule. If the Government is even partly responsible for the delay, the contractor will generally be entitled to an equitable adjustment in contract price for costs to overcome that impact, or the Government must accept the delay in delivery.

If it becomes clear that the contractor is not performing in a manner that will allow on-time completion, a meeting should be convened with the contractor's top level managers. At this meeting, the ACO should again convey the Government's concern over the contractor's lack of progress and discuss the specific issues of concern. The contractor should be afforded the opportunity to respond to these concerns and to address his own views as to the cause of the problem. If the contractor identifies the Government as the primary cause of the schedule slippage, the issues raised must be addressed by the ACO. If the SUPSHIP agrees with the contractor that the Government is a party to the schedule delay, then action must be taken to compensate the contractor for the impact. If the Government does not agree with the contractor, then the ACO must make this view clear to the contractor. The meeting should result in an agreement about the actions to be taken to ensure project completion on schedule, and the results of the meeting should be documented in a letter from the ACO to the contractor. This letter should document the relative positions of the Government and the contractor with regard to any outstanding disagreement and to document any agreements made. This letter serves to place the matter on a business-like footing and documents the contract file for future reference.

If the contractor's failure to recover and maintain the schedule is significant enough to place project completion in jeopardy, then SUPSHIP management's concerns should be conveyed in writing to the contractor. Such a letter may be referred to as a "View with Concern" or "View with Alarm" letter, depending on the degree of severity of the situation. In the letter, the SUPSHIP should identify the areas of concern and how the Government "views" the situation, and offer perceived reasons for the situation. The contractor should also be requested to provide a written response to the letter, identifying actions the contractor proposes to take to prevent delay in completing the project. Where the contractor insists that

work can be completed on schedule without acceleration or other measures involving added cost, the Government normally would not unilaterally direct the contractor to perform otherwise. Any direction by the Government that is contrary to the contractor's plan will generally result in a Request for an Equitable Adjustment (REA) or a subsequent claim. In a cost-reimbursable contract where the contractor insists that work cannot be completed on schedule without acceleration or other measures involving added cost, the Government cannot unilaterally direct the contractor to perform otherwise without incurring some additional funding obligation to the contract.

5.4.3.2 Policy for Overtime and Multi-Shift Work

FAR, reference (f), Part 22.103-2, DFARS, reference (g), Part 222, and the NCH Part 22, prescribe contracting policy and procedures for implementing pertinent labor laws and associated contract clauses.

5.4.3.2.1 Overtime and Multi-Shift Premiums for Fixed-Price Contract Considerations

In accordance with NCH 22.103-4, for vessel new construction, only NAVSEA 02/02B has authority to approve overtime work to obtain delivery of the vessel prior to the delivery date.

5.4.3.2.2 Overtime and Multi-Shift Premiums for Cost-Reimbursable and Letter Contract

When forwarding any contractor request for overtime or multi-shift premium approvals to NAVSEA, SUPSHIP should ensure that all information necessary to make a determination is included, should comment on the accuracy of the facts in the contractor's request, and should advise whether or not the request should be approved.

5.4.4 Typical Construction Schedule and Phases

The SUPSHIP Enterprise is mission ready to support multiple simultaneous phases of the Navy Shipbuilding Programs that include a significant number of maritime industry participants in each class of surface ship or submarine acquisition contract. Detailed advanced planning is a prerequisite for identifying and resolving the unique challenges in each phase acquisition program. A SUPSHIP may be involved with the PEO, PM and PCO as early as initiation of planning for the construction phase.

5.4.4.1 Pre-Award Participation

The Program Manager and the NAVSEA 02 Procuring Contracting Officer (PCO) utilize both Government and contractor personnel from various organizations for developing the acquisition strategy and documents that will be utilized for a ship or submarine acquisition program. SUPSHIP personnel are often tasked to participate in this phase of the acquisition process that may include assisting in the development of the specifications and a contract solicitation package. The solicitation package is approved by the PCO prior to NAVSEA advertising the soliciting for bids or requests for proposals at FedBizOpps.gov and/or

NECO.navy.mil websites. The bids or proposal packages from contractors are received by the PCO and the ones that are determined to be responsive and responsible are presented to a pre-determined group of subject matter experts who comprise a Source Selection Board that may include SUPSHIP personnel. The PCO provides explicit direction to the board on the process and criteria that is to be used to evaluate the merits of each contractor's package. The board concludes its action by making a recommendation as to the contractor who has presented a responsible offer that represents the "best value" for the Government. SUPSHIPs' participation in a pre-award process presents an excellent opportunity for the Supervisor and staff to commence planning for the potential for an award to their respective contractor(s) including establishment of the project management team or to make changes in existing project offices.

The bid or proposal evaluation phase may be followed by the PCO conducting a pre-award survey or contractor review in concert with the SUPSHIP who has plant cognizance over the potential contractor. SUPSHIP personnel have the best information concerning the capabilities and past performance of the contractor along with information in the Contractor Performance Appraisal Reporting System (CPARS). Following the pre-award survey and prior to contract award, the PCO may require the contractor to specify in writing what corrective action has been taken that will preclude reoccurrence of deficient areas that have been noted in the past or to present documentation for proposed resolutions for deficiencies that were discovered in the pre-award survey. There is general guidance available from NAVSEA 02 on the processes that will be used during the performance of a pre-award survey. Contract award is made once the PCO has determined that the potential contractor's bid or offer is fair and reasonable, that the necessary capabilities and manpower are readily available to execute the contract, and when DCAA has concluded that the company is financially viable. Upon award, the PCO provides a Letter of Delegation that specifies the authority and responsibility of the SUPSHIP Chief of the Contracting Office (CCO) and the assigned Administrative Contracting Officer (ACO) for the project in administering the awarded contract. The Letter of Delegation is used by the ACO, Project Officer/PMR and project office personnel in performing their Contract Administration Service (CAS) functions, both on-site and off-site. Refer to Chapter 3, "Contracting and Contract Administration," for a more detailed discussion of this process.

5.4.4.2 Contract Award to Start of Fabrication

SUPSHIP's accountability and responsibilities for the administration of the assigned contract commences when the PCO provides the letter of delegation to the CCO. At this point the PCO and the CCO should have established policies and working relationships that will be in effect for the duration of the contract performance period unless written notice is provided otherwise. The PCO will also specify the authority and responsibility that will remain with the Procuring Contracting Officer relative to contract administration. For example, the PCO will retain authority in many cases for exercising specific options, increasing quantities of deliverables, authorizing overtime above a specified threshold, etc. In addition to the PCO and CCO/ACO working relationships, the SUPSHIP assigned project management team and the Administrative Contracting Officer (ACO) Team from Code 400 must develop a clear understanding of the terms and conditions of the contract and establish a "playbook" based

on the guidance that is provide by the CCO and PM. It is highly recommended that all SUPSHIP Project Management Team personnel become intimately familiar with the contents of the SOM as it relates to not only their individual functions on the waterfront, but to an understanding of the functions that are performed by the SUPSHIP CAS organization plus the non-CAS functions that provide support for the SUPSHIP mission. Chapter 3, "Contracting and Contract Administration," is an excellent place to start the study.

There is tremendous activity in this initial phase following award. The SUPSHIP team should have been properly engaged in the advanced planning during the pre-award period so that at "start up" the transition into a fully functioning and responsive project office can be accomplished in an organized manner and in a reasonable period of time. Concurrently, the contractor will commence preparing engineering products, detailed production planning, and mobilization of the workforce and required resources necessary to execute the terms and conditions of the contract. Critical during this early period in the life of the contract is the requirement that key SUPSHIP personnel, i.e., project office personnel and those supporting CAS functions, be fully engaged with their counterparts in the contractor's organization so that effective "ground rules" can be established as early as possible. This early communication and interface significantly increases the potential for a successful project. However, in this relationship, all SUPSHIP personnel should be familiar with the contents of Chapter 2, "Standards of Conduct and Fraud, Waste, and Abuse," concerning conduct when exercising the responsibilities of their government position.

In design/build contracts, there are two primary events occurring simultaneously and immediately after award and start of fabrication.

- Design: The contractor's design division's naval architects and engineers, that may include a support subcontractor, develop the engineering products.

    - The ship design personnel utilize specialized design and engineering software to support computer modeling, engineering analysis, finite element analysis, developing projected weight reports, preparing schematics, providing detailed drawings, developing lofting packages, identifying Long Lead Time Material (LLTM) requirements, developing Material Requirements Listings (MRL's), etc. The contractor's management team will typically designate a specific schedule for design product delivery that will support commencement fabrication at the earliest opportunity based on the existing production workload. The products produced during the design that are to be used by the various shipyard trades are reviewed as early as possible by the production planning team and shop personnel to help develop the production processes and shop floor practices and construction plans for erecting the ship.

    - SUPSHIP project office and assigned naval architects and engineering personnel are integral to this process. They participate on Integrated Process Teams (IPT) including System Integration Teams (SIT), Major Area Teams (MAT) and Manor Area Integration Teams (MAIT). In addition, they

review the contractor's engineering products and drawings plus assess the contractor's compliance with the contract's technical and performance specifications. In this capacity, the SUPSHIP engineers and architects support the responsibilities of the SUPSHIP Chief Engineer as the Technical Warrant Holder. Chapter 8, "Waterfront Engineering and Technical Authority," provides amplifying information.

- Production Planning and Mobilization:
    - The contractor's production departments and associated shop trades plus material division will begin advanced planning for "start of construction". Examples include:
        - Working with the engineers in the design division to integrate produce-ability recommendations to improve the production processes for various components of the ship on the shop floor and building ways.
        - Preparing process control procedures where required.
        - Assessing opportunities for applying the principles of LEAN and Six Sigma in the early phases of this planning process and integrating this into improved shop floor practices.
        - Reviewing drawings as they are provided by design to the planners in the production trade shops to facilitate shop floor planning and mobilization of the required resources.
        - Commencing Long Lead Time Material (LLTM) procurement and purchasing material such as steel, aluminum, shapes, etc., that will be required to be properly stowed and available in the yard to support production schedules and work flow processes.
        - Finalizing subcontracts for support services or fabrication of designated components.
        - Conducting Integrated Baseline Review (IBR) of the PMB normally six (6) months after contract award and reviewing detailed shop production schedules for all projects that require in-shop and field support, interfacing the production resource requirements and conflict analysis related to all projects, and presenting work planning alternatives for meeting production schedule requirements.
        - Commencing fabrication of manufacturing aids, such as jigs, fixtures, modeling, etc., in preparation for full-scale production.
        - Preparing "yellow gear" to meet production requirements.

- Preparing the panel line and support resources.

- The SUPSHIP Project Team should be a participant in this early planning phase as it is the prerequisite for sustaining the production work flow.

5.4.4.3 Start of Fabrication to Keel Laying

a. Initial Production. While the design effort continues, the production work commences and runs concurrently. Raw materials are received, inspected, stored, and staged to support the production trades. Fabrication of special components of the hull structure may commence in advance of the "official" construction start date, depending on the workload in the shipyard and based on the schedule for delivering design products and their availability to the trades. The SUPSHIP naval architects and engineers will be required for monitoring the design while production controllers begin observing the start of production. The "Start of Construction" is an event within the shipyard that signals the "official" date from which the production schedule should be evaluated. It normally consists of a ceremony in which a dignitary designated by the shipyard cuts the first steel plate that will be used in construction. The early phases of fabrication include manufacture of special assemblies, plates and shapes that will become components of the hull as erection continues following the keel laying. The level of this effort accelerates as production products become available.

b. Dimensional Control/Accuracy Control. A critical element of all of the shipbuilding processes is an aggressive program for dimensional control that must commence at the beginning of the production process and continue through delivery of the ship. The shipyard should demonstrate its plan for assuring dimensional control to the satisfaction of the SUPSHIP project office and, in particular, the Project Engineer and Quality Assurance Specialist. Manufacturing accuracy must be maintained within acceptable limiting tolerances and in accordance with the design specifications, drawings and good engineering practices. SUPSHIP Production Controllers and Quality Assurance Specialists are key "deck plate" observers in assuring that the contractor is meeting the design tolerance and specification requirements. Chapter 9, "Contract Administration Quality Assurance Program," provides amplifying information.

5.4.4.4 Keel Laying to Launch/Float Off

a. Full-scale Production. This phase may span years and the shipyard typically utilizes the most manpower on a day-for-day basis as full-scale production is achieved. There are multiple worksites operating simultaneously within the shipyard and often at subcontractor facilities. Within SUPSHIP, as the workload for the Engineering Department begins to decrease as the contractor's design effort nears completion, the workload for the other departments begins to ramp up to support the production and test process and to sustain the contract administration requirements for the project.

b. Keel Laying Ceremony. A significant event in the shipbuilding schedule is celebrated by the Keel Laying Ceremony that identifies the date that the shipyard is starting to erect the

structure on the building ways. SUPSHIP and the contractor invite dignitaries to attend this event that heralds the name that the Navy has selected for the hull and the beginning of the designated ship's life cycle. A dignitary places his/her name or initials on the keel, and it is preserved through welding or other means so that it is a part of the ship throughout its life cycle.

c. Unit Construction and Ship Erection. Production accelerates, workforce increases on the project and the observations and process monitoring by the SUPSHIP Project Team on the waterfront increases as the design matures and the design products are provided to the trades. Raw materials are receipt inspected and moved from the receiving yard and staged to support production by the various production shops. Fabricated assemblies, shaped plates, longitudinal and transverse members, and other components of various weights and sizes of hull structure are staged in preparation for integration into their respective structural units (some yards use the term blocks). A structural unit may be a specifically designated hull component, a compartment of the ship, or a large structure that will be erected in sequence with other units as ship construction continues. The production schedule will provide a build sequence for each respective unit and show the estimated date that the unit should proceed through the assembly line. Mobile transporters or cranes move the units among the production shops and along the assembly lines as they are moved into their erection sequence and integrated into the hull structure as it takes shape.

d. Unit Construction Off-Site. There are instances where the SUPSHIP will be required to monitor the construction and outfitting on a unit at a shipyard or industrial facility that is not co-located with the shipyard where the ship is being erected. SUPSHIP management may elect to establish off-site offices or satellite offices or to provide personnel on a temporary basis to oversee this effort.

e. Structural units are often outfitted to the maximum extent possible prior to joining them to their companion units. This increases production efficiency because the unit is most accessible for the trades, provides the shortest transit route to reach their assigned work area, and permits open access for shipping components and equipment into the compartment. Outfitting includes the installation of hangers, mounting brackets, equipment racks, equipment foundations, insulation materials, cable ways and cabling, compartmental lighting, piping, and equipment into the unit as it is being assembled, and as it moves through the various stages of production and down the production line on as it progresses to the building ways.

f. Electrical & Piping Components Installation. The open access to units permits commencement of electrical cable and piping installations. As units are assembled into the hull structure and vacated by the fitters and welders, the contractor will typically accelerate the cable pulling effort and electrical component connections, activating and using installed lighting systems vice temporary lighting, inserting pipe spools to complete the piping runs and connections to equipment installed during unit assembly.

g. Equipment Installation. The contractor will continue landing additional equipment on its foundations and making piping and electrical connections and initial alignments.

h. Testing. As outfitting continues, the production crews and contractor's test team may begin preliminary production testing on equipment and systems. The Total Ship Test Program and associated test plans should specify any preliminary interim tests that are to be observed by government personnel. Refer to Chapter 10, "Testing, Trials and Delivery."

i. Tank/Void Closure/Hull Accesses. Several weeks prior to launch or float off, the production focus must concentrate on the status and closure of all hull openings that will be below the waterline. Completion dates should be locked in for all underwater preservation and installation of the running gear that will no longer be accessible except by divers. The project management team will perform frequent visual surveys of the hull to monitor progress in making the hull water tight. Select tanks and voids may receive their final completion inspection, closure and air test. The fact that final closure and inspection has been completed should be noted in the database that reflects compartment status.

j. Stern Release. A specific date should be established as the stern release date such that there is assurance that all associated work will be completed as required to the maximum extent possible when the hull enters the water.

k. Propulsion System Alignment. Preliminary alignment of shafting and propulsion drive system is conducted prior to launch or float off. This is in preparation for final alignment while waterborne. The SUPSHIP project team will monitor this process.

l. Weight & Moment Calculations. The contractor's production and engineering personnel will finalize the weight information that has been recorded since commencement of erection for all material and equipment that will be installed in the hull on the date of Launch or Float Off. This weight report is utilized by the naval architects to support calculations that project the ship's reactions and stability characteristics that should be experienced as the ship's hull enters the water. The Project Office personnel will monitor and review the results of the contractor's calculations, seeking support from Code 200 as required, to validate that the results support the required configuration at launch or float off. The Chief Engineer will review the calculations and acknowledge concurrence to proceed.

m. When the hull or ship is to be transitioned from the building ways to a launch platform or drydock, a conference is scheduled and conducted by the SUPSHIP Docking Safety Observer. Participants include representatives from the project office, SUPSHIP engineering department, the contractor's dock master, and members of the pre-commissioning crew or ship's force, if present. The details of establishing the stability conditions before transitioning and defining safety and service requirements are discussed, as well as responsibilities and processes that will be used for a ship's movement during transition into platform/dock. At this conference, the Chief Engineer

will provide the status of the Government's certification that the contractor's translation plan is compliant.

n. Pre-Launch/Float Off/Undocking Inspection. The Project Management Team, SUPSHIP's Docking Safety Observer(s) and the Contractor's Dock Master at a minimum will conduct a thorough inspection of the hull with particular attention to the underwater body to identify all hull penetrations and then confirm that each penetration has at least one valve protection or the equivalent such as a properly installed/secured flange plate or approved cofferdam. Trim and stability calculations may require that additional weights be installed at specific locations on the ship's deck and compliance is to be verified prior to the ship entering the water.

o. Prior to float off the Supervisor will ensure that the contractor has established the Ship Safety Council in accordance with reference (h), NAVSEA 0905-485-6010, "Manual for the Control of Testing and Ship Conditions," and has assigned a SUPSHIP representative to the council.

5.4.4.5 Launch/Float Off to Trials

a. Launch/Float Off Preparations. Reference (i), NSTM Ch 997 (NAVSEA S9086-7G-STM-000/CH-997), "Docking Instructions and Routine Work in Drydock," provides guidance on various docking operations, including transitioning hulls during construction. Contractors are required to provide detailed procedures for accomplishing this transition movement. The SUPSHIP is represented at all drydock evolutions by a qualified SUPSHIP Docking Safety Observer.

   The contractor assumes the duties and responsibilities that Navy Regulations prescribe for the Government's docking officer. The ship is under operational control of the contractor's dock master while the ship is in the drydock and while the ship is leaving the drydock or platform. For safety, while the ship is under the operational control of the dock master, any assigned crew must comply with the dock master's requests. The only time that a Government representative should interfere with the dock master's operational control of the ship is in the case of dire circumstances involving the safety of the ship or safety of life.

b. Launch/Float Off and Christening Ceremony. This is a significant event in the construction process. The Project Team is the focal point for assisting the contractor prepare for this event. The Supervisor, Code 100 staff, and the SUPSHIP PAO and/or the Ceremony Coordinator/Protocol Officer are all involved with the advanced planning of events associated with the christening. The Navy designates a sponsor for the ship, the principle speaker, and any other guest speakers, plus a listing of invited guests of the Navy. The contractor also has invited guests, plus normally announces that the ceremony is open to the public. Reference (j), SECNAVINST 5031.1B, "Ship Naming, Keel Layings, Christenings, Commissionings, and Decommissionings," provides guidance on the processes and responsibilities associated with these ceremonies.

c. Pre-Commissioning Unit (PCU). Navy personnel are assigned to the ship and begin to arrive as prospective ship's company and observe as the ship's construction proceeds. A Memorandum of Understanding (MOU) should be developed between SUPSHIP and the Pre-Commissioning Officer (PCO) that outlines the working relationships between the PCU personnel and the project management team. This MOU should clearly state that responsibility and accountability for contract administration rests exclusively with SUPSHIP and the project management team. The Navy crew should be counseled that any deficiencies that they observe are to be addressed with the project management team and not the contractor's personnel.

d. Structure Completion. Hulls often enter the water with the super structure and compartment structures incomplete. This will require the Project Team to monitor progress in preparation for starting compartment close-out.

e. Outfitting and System Readiness. In this period of performance the SUPSHIP team and other supporting organizations, will be providing all remaining government-furnished material and equipment. In addition, the consolidated government team of observers will be monitoring the completion of outfitting, verify that equipment is prepared for operational testing, and confirm that individual systems are installed in accordance with the design and comply with the technical and performance specifications. The observations by designated government personnel are made to confirm that each equipment and system is ready to commence testing and to observe that the results of the test demonstrate that the equipment is ready to support trials. The project management team will be performing physical progressing and comparing the results to the contractor's EVMS concurrent with the efforts to complete the outfitting and production testing.

f. Production Testing. The project management team is charged with the responsibility to witness or review the contractor's recorded results. The test program for nuclear propulsion systems is conducted differently that those for conventional propulsion systems. Chapter 10, "Testing, Trials and Delivery," addresses the requirements for a Total Ship Testing Program and the preparations that are required prior to the contractor's transition from equipment and systems installation to production testing. The Total Ship Test Program and Integrated Test Plan identifies the requirements for specific equipment and systems testing procedures as they are prepared for certification (where required as addressed later in this chapter) and trials. The seven stages of testing for equipment and systems in shipbuilding projects are identified in Chapter 10. Non-compliant results that are identified during testing are to be monitored until each item has been satisfactorily corrected.

g. Compartment Completion/Close-Out. SUPSHIP should be familiar with the contractual requirements for compartment completion. This is one of the most difficult aspects of the construction and completion process that the project management team must observe and requires prompt corrective action for any deficiencies that are identified during the Close-Out Inspection. The contractor's schedule for compartment close-out should be monitored closely as the project management team participates in inspecting each space

onboard the ship to assure that it is completely outfitted, plus painting, labeling, insulation, and decking is in accordance with the specifications. Once witnessed as complete and "space lock-out" is established, a rigorous "access control program" by the contractor and/or ship's force must be in place should late work or access by production be required for fire watches, etc.

h. Preparations for Trials. One of the major objectives during the Launch to Trials period for the contractor and the project management team is to maximize the material readiness of the ship and to confirm by the test results that equipment and systems are complete and support the upcoming Trials period. This can only be achieved with a focused effort by both the contractor and Government personnel to complete and record the results of all required tests prior to commencing trials to confirm that the ship is ready for operations at sea. Members of the PCU will participate as observers except on submarines and carriers where the crew vice contractor personnel operates the nuclear propulsion plant. Refer to Chapter 10, "Testing, Trials and Delivery," for further discussions concerning testing and preparations for trials.

5.4.4.6 Trials to Delivery

This phase is addressed extensively in Chapter 10, "Testing, Trials and Delivery," and each member of the project management team should be knowledgeable of its contents as it relates to his/her roles and responsibilities concerning the preparation for and conduct of the various trials.

a. Equipment/Systems Operations. Nuclear propulsion systems, during pre-critical testing, require a nuclear-certified Navy crew to demonstrate the equipment and systems performance. For ships with conventional propulsion systems, the equipment and systems are operated by personnel provided by the contractor until delivery and the ship is transferred to the Pre-Commissioning Unit's ship's force.

b. Trials & INSURV. Refer to Chapter 10, "Testing, Trials and Delivery." The purpose of the trials is to demonstrate to the Board of Inspection and Survey (INSURV) that the ship is materially ready to perform its mission. Builder's Trials and Acceptance Trials are conducted to prove the material readiness of all installed equipment and systems, confirm that all habitability requirements are compliant with existing regulations, berthing and messing spaces and operational spaces are completed, conditions for habitability are satisfactory, and that the ship's performance meets the specified mission requirements. All required certifications addressed below are to be completed and presented to INSURV when the Board arrives for Acceptance Trials. Trial cards are generated during this period for all non-compliant deficiencies and the cards are screened and addressed in a Screening Conference at the conclusion of the trial to assign the responsibility, contractor or government, for taking action to correct or resolve the trial deficiency. A database of trial cards is established and the status is tracked until the non-compliant deficiency has been corrected and the government acknowledges that the action is completed or it is closed to the satisfaction of the designated government organization. In some instances, normally with mission degrading deficiencies, INSURV

may require retrial of certain events and will return to observe the demonstration and confirm that the results are satisfactory. INSURV makes a recommendation regarding readiness of the ship for acceptance by the Government following Acceptance or Super Trials.

c. Compartment Turnover. Normally, a sizeable percentage of the PCU Crew will be available to participate in the Acceptance Trials. The nuclear propulsion plant is operated by a certified Navy crew during trials. In some programs, carriers and submarines in particular, the crew will accept compartments before trials. Generally, the crew will participate in the walk-through and inspections of the compartments that the crew will become responsible for at turnover. These inspections are particularly important as they set the baseline for validating the material condition of spaces and any deficiencies that require correction prior to “sign off” for compartment completion and turnover to ship’s force no later than the date of ship delivery to the Fleet.

d. Configuration Validation. Configuration management is critical from the date that the keel is laid until the ship is decommissioned. The project management team has a key role in working closely with the contractor to validate that the ship is constructed and outfitted in accordance with the design. The baseline trim and stability when released by the shipyard following the inclining experiment determines the weight margins, if any, that must not be breached without offsetting weight compensation as the ship goes into modernization periods or ship’s force attempts to make changes without proper research and authorization. In many ship classes, there are space and weight reservations that are made in anticipation of installing a modification to the ship’s configuration via the Fleet Modernization Program. As the ship is being erected and outfitted, the contractor is developing a listing of all onboard material, machinery and equipment, specialized tools and equipment, testing equipment, etc., that will accompany the ship as Government-owned property at Sailaway. There are software tools used by the various shipyards and Navy, such as ROMIS, to track and manage the Integrated Logistic Support (ILS) requirements for each ship. Refer to Chapter 14, “Integrated Logistics Support.”

   The designated planning yard, assisted by SUPSHIP and NAVSUP representatives, conduct a configuration validation to verify that installed material and equipment is in accordance with the contractor’s listing. The validation period may continue for several weeks until deficiencies are rectified. This validation, along with the ILS initiatives, also assures that the Consolidated Onboard Ships Allowance List (COSAL) accurately reflects the “as built” configuration.

e. Habitability Inspection. Prior to “in service” and crew move aboard, the gaining Type Commander will conduct an independent habitability inspection. The results are again recorded, items are screened, and responsibility for correcting the deficiency is assigned to the contractor or government.

f. Prior to Delivery. The project management team will closely monitor the status of all trial cards and known deficiencies or incomplete work as the date for the Navy to take

delivery of the ship approaches. This action is required in advance of SUPSHIP providing notification that the ship or submarine is ready for delivery and the DD 250 is signed. All outstanding trial items that are the responsibility of the contractor to correct following delivery are identified as outstanding items and the listing is attached to the DD 250 as exceptions for acceptance of the ship.

g. Exceptions to Completion. The Contracting Officer utilizes the listing of non-compliant deficiency items as the basis to withhold the necessary funding that is estimated to be required to correct all remaining items at delivery. This action is authorized should the contractor not take the proper corrective action and the deficiency requires the Government to obtain the services and pay another contractor or activity to correct the problem. Refer to Chapters 3, "Contracting and Contract Administration," and 10 "Testing, Trials and Delivery," concerning withholding funding.

h. Construction of ships for Military Sealift Command. The ships that are constructed or converted for use by MSC are required to comply with USCG regulations, ABS rules and other regulatory agencies as well as regulations that apply to outfitting ships that are to be manned by civilian mariners. The test and trials for MSC ships must demonstrate that the ship has been constructed and installed systems and equipment is compliant with the regulatory agencies requirements.

5.4.4.7 Delivery through Sailaway

Chapter 10, "Testing, Trials and Delivery," provides a detailed discussion of the events and the requirements for Accepting Delivery of the ship.

a. DD Form 250. Signing the DD 250 "Material Inspection and Receiving Report" by the Navy Accepting Official accepts delivery of the ship from the contractor. Normally, the Supervisor signs the document as an agent of the accepting authority (COMNAVSEA).

b. PCU Actions. The pre-commissioning crew will utilize the guidance in the Joint Fleet Maintenance Manual (JFMM), Volume 1, "New Construction," as they participate in the various events up to and following delivery in preparation for operating the ship. The PCU personnel will continue with crew training in preparation for sailaway.

c. LOA. A critical event for the crew is the Light Off Assessment (LOA) that is arranged and executed by the ship's operational Immediate Superior In Command (ISIC) that evaluates the crew's readiness to operate the main propulsion system and supporting auxiliary systems. There is normally an intense period of time, dedicated for crew training, when the contractor is required to remain clear of the machinery spaces as the crew exercises using the approved documents for equipment light off, casualty control, and fire fighting. As the crew prepares and trains for this examination, it is necessary that the Project Management Team coordinate production work with the contractor to minimize interference with training and drills that include the necessity to make repairs to equipment failures during the training period and actual LOA.

d. Load out. The Contractor has only carried limited support onboard the ship during the trial period. As the ship has approached the delivery date, outfitting that is the responsibility of the contractor is finalized and included in the configuration validation process. Once the ship has been delivered, the Navy commences load out of ILS and supplies that will be required to sustain operations and training at sea by the crew and continue testing under the control of the Navy and the ISIC. Items that are required for maintenance and habitability include technical documentation (technical manuals, drawings, test equipment), ships selected records, ships stores, items required to maintain habitability standards, equipment required for safety of life at sea, etc.

e. Post Delivery Drydocking/Availability. This period is presented so that the contractor has an opportunity to resolve or correct any remaining deficiencies and to permit accomplishment of additional work not in the original base contract. Starred Trial Cards may remain that are required to be corrected prior to sailaway from the contractor's facilities. A drydocking may be required prior to sailaway of the ship or submarine that will be dedicated to perform additional work on the underwater body or running gear, or for the final preservation of the hull based in part on the length of time and environmental conditions that the hull has encountered since launch/float off. NSTM Ch 997 (NAVSEA S9086-7G-STM-000/CH-997), "Docking Instructions and Routine Work in Drydock," provides procedures for the safe drydocking and undocking of ships and submarines. The ship or submarine design agent prepares the docking plan in the final phases of the construction program to specify the required drydock position and other pertinent information for docking the ship.

f. Docking Conference. A drydocking conference is scheduled and conducted by the SUPSHIP Docking Safety Observer. Participants include representatives from the Project Office, SUPSHIP Engineering Department, the contractor's dock master, and members of ship's force. The details of drydocking the ship, determining the docking position, the stability conditions that must be established, requirements for the protection of underwater projections, defining safety, and determining service requirements are discussed. At this conference, the Chief Engineer will provide the status of the Government's Certification that the contractor's Proposed Docking Plan is compliant.

g. Drydocking. The SUPSHIP is represented at all drydock evolutions by a qualified SUPSHIP Docking Safety Observer. When docking or undocking in a contractor's facility, the contractor assumes the duties and responsibilities that Navy Regulations prescribe for the Government's docking officer. The ship is under operational control of the contractor's dock master when the ship is drydocked and while the ship is entering or leaving the drydock. For safety, while the ship is under the operational control of the dock master, any assigned crew must comply with dock master's requests. The only time that the Government should interfere with the dock master's operational control of the ship is in the case of dire circumstances involving the safety of the ship or safety of life.

h. Warranty, guarantee and acceptance are discussed in detail in Chapter 3, "Contracting and Contract Administration."

5.4.4.8 Sailaway to Post Shakedown Availability (PSA)

1. Sailaway. The project management team, working with the contractor and ship's company, should have maximized the opportunities, either in a post-delivery availability or when the contractor can be scheduled into the ship's routine, to finalize remaining deficiencies prior to departure from the shipyard enroute to the assigned homeport. All remaining contractor responsible items at sailaway should be validated by the Project Officer/PMR and all outstanding maintenance or repair items uploaded to the ship's CSMP as a deferred maintenance items. A Warranty Engineer is assigned by the contractor to address emergent defects or deficiencies and has the authority to obligate the contractor relative to those items that are determined to be contractor responsible during the guarantee period. This period is normally six months, but may be longer depending on the terms of the contract. As noted in Chapter 10, if the ship's schedule permits, the Type Commander or ISIC may provide an opportunity for the contractor to correct deficiencies. There may also be periods when a "ship rider" team will be required to make repairs to guarantee items.

2. Final Acceptance/Contract Trials. Prior to the Post Shakedown Availability (PSA), the ship will have been operated during underway training periods while testing systems in an operational environment and preparing for its mission assignments. This trial is observed by INSURV prior to the PSA and is a final validation that the installed equipment and systems are not only mission capable, but meet the expectations of the Navy for reliability. Deficiencies that have been identified are again assessed as possible guarantee items and corrective action is normally scheduled for accomplishment during the PSA, unless a deficiency is mission degrading and impacts the ship's operational schedule and commitments prior to that time.

5.4.4.9 Post Shakedown Availability/Selected Restricted Availability (PSA/SRA)

This availability, approximately three months in length, is potentially the last opportunity to correct all remaining contractor responsible trial card items or guarantee work in addition to emergent maintenance requirements. Generally, the JFMM is the governing document that is used by the Fleet for planning the work to be accomplished during this availability. In some cases, a separate contract is used for planning the PSA. This scheduled maintenance availability may include a Selected Restricted Availability (SRA). The ship's operational command designates the location for this availability, and if possible, it is performed in the ship's homeport. This also presents an opportunity for the Program Manager to apply any SCN funding to resolve trial card deficiencies that have been identified as government responsible or to fund engineering change proposals that remain outstanding. It is also possible that Ship Alterations may have been developed that will be installed at this time. Typically, this availability ends approximately one month prior to the Obligation Work Limitation Date. The OWLD is the official date where the obligation of SCN funds is no longer authorized and the Navy commences using O&MN, OPN and WPN funds for future requirements.

5.4.4.10 Combat Systems Ship Qualification Trials (CSSQT)

This is an extension of previous trials; however, it focuses exclusively on the Combat Systems Suite and all auxiliary systems that support them and is performed prior to Obligation Work Limitation Date (OWLD). CSSQT is conducted to analyze the capabilities of total system and it is a readiness evaluation utilizing operational scenarios, active targets, instrumented ranges, and trial facilities. It is intended to prove that the ship and crew are capable of performing all mission requirements that employ any of the installed combat systems components, including live firing of the onboard weapons systems.

5.4.5 Logistics

Chapter 11, “Property Administration,” and Chapter 14, “Integrated Logistics Support,” provide amplifying information. The SUPSHIP receives support for this function through a Memorandum of Understanding with the Naval Supply Systems Command and includes functions that are to be performed by Fleet Industrial Support Command (FISC).

5.4.5.1 Government-Furnished Equipment (GFM)

In general, the status of GFM and CFM is monitored by the FISC and SUPSHIP team and is discussed at progress meetings. Material status reports are developed and maintained by expediters who should work closely with the project office in identifying issues that may impact the contractor’s schedule.

Every effort should be made to resolve material shortages before shortages affect the production schedule. Techniques such as changing GFM to CFM when it has been determined that the contractor can find an alternate source for late GFM, are appropriate if a Government-responsible delay in the contractor's schedule can be avoided.

After contract award, the contractor may discover that material that was commercially available during the pre-award period is no longer available. Although under most circumstances the contractor remains responsible for the potential impact of late or missing CFM, it is still in the best interest of the Government to work with the contractor to resolve CFM problems. If the contractor can show that material is no longer commercially available due to unforeseeable circumstances, the contractor may be entitled to an equitable adjustment in contract price and delivery schedule for the adverse impact. In any event, if the Government can mitigate the adverse impact, it is best to do so.

5.4.5.2 Outfitting

The Program Manager determines which equipment and material has a sufficiently long lead time such that is should be provided to the contractor by the Government. Long lead items procured by the Government should be scheduled to arrive in sufficient time to support the contractor’s requested delivery date. Outfitting/installing the line items identified in the Material Requirements Listings commences in the early stages of production and continues until the equipment or system is operationally acceptable. The SUPSHIP Project

Management Team works closely with the contractor, and the Government's Property Administrator oversees the contractor's shipping and receiving operation. This oversight by logistic support managers is maintained to assure that incoming items are properly receipt inspected, any noted deficiencies are resolved, and that items are properly stored while awaiting "call out" to the worksite where it is to be incorporated into the hull structure. Components identified as outfitting items range from piping hangers and clips to the largest component that is to be installed in the hull structure, test equipment, special tooling, etc.

5.4.6 Financial Management

The Project Officer/PMR must work closely with the comptroller/financial management personnel and the ACO in tracking the status of project funding. Chapter 4, "Financial Management," provides detailed information on this function within the SUPSHIP. As stated in Chapter 3, "Contracting and Contract Administration," only the ACO can obligate the Government, and the personnel on the waterfront are at risk for being party to a *constructive change*. A constructive change occurs whenever the Government, through its action or lack of required action, causes the contractor to depart from the agreed to plan or perform other than as specified in the contract. During the performance period of the contract, the project team must exercise great care to minimize the impact of constructive changes.

5.4.7 Configuration Management (CM)

5.4.7.1 Introduction

A critical design and engineering requirement during the design and construction process, for both the Government and contractor, is to have a ship configuration management program in place. The program should be in accordance with NAVSEAINST 4130.12B, "Configuration Management (CM) Policy and Guidance," reference (k), and TMIN-SL130-AB-GYD-010/CMP, "Configuration Management Guidance Manual," reference (l). A configuration management program is required to assist the contractor and Government in maintaining an accurate and up-to-date account of the approved as well as proposed design changes to the hull structure, plus changes to installed components and systems configurations that do not comply with the previously approved required material listings and applicable drawings. This configuration control process must also interface with the weight control plan. SUPSHIP typically establishes a Configuration Control Board (CCB) that reviews and approves proposed design changes and engineering change proposals and requests for deviation and waiver as appropriate. The PM and the SUPSHIP Project Officer, via the CCB and CHENG, must have the capability to track the status of proposed changes to the "as designed" configuration and the decisions related to them. Engineering changes often have the potential to impact the production process and may add time and cost to the project if they are approved for implementation. Once an initial detailed design drawing signature block is signed/ approved, any change or revisions to that drawing must also be approved as defined in the approved Configuration Management Plan or similar contractually required configuration management document. The final revision to any drawing should reflect the detailed "as released" configuration of each compartment within the ship upon delivery. Accurately documenting the configuration of the ship or craft is not only critical for future

maintenance and repair, but in particular, it is vital as the baseline for maintaining the stability requirements for the ship and during damage control events.

5.4.7.2 General Terms

Comprehension of this section is greatly enhanced by an accurate understanding of the following terms. These terms are fully described in reference (m), MIL-HDBK-61A, "Configuration Management Guidance." (Some active contracts may still refer to MIL-STD-973 that was canceled and replaced by MIL-HDBK-61A.)

- Engineering Change Proposal (ECP)/Engineering Report (ER)
- Deviation
- Waiver
- Configuration

Generally, ECPs, deviations, and waivers result in a Headquarters Modification Request (HMR) or Field Modification Request (FMR), which in turn result in formal modifications to the contract issued on an SF 30. This section addresses the change request process pertaining to ECPs, deviations, waivers, HMRs, and FMRs.

5.4.7.3 Change Approval Authority for ECPs, HMRs, and FMRs

Approval authority for ECPs, HMRs, and FMRs should be governed by agreements in an SPD or MOA. The following sections provide general guidance.

5.4.7.3.1 General

All ECPs, HMRs, and FMRs will be approved only by duly authorized individuals acting within the scope of their authority. The recipients of these documents may act on them only when duly authorized individuals have signed them. This section establishes the requirement for written SUPSHIP delegation of authority to individuals in SUPSHIPs and SUPSHIP Detachment(s) to approve or disapprove ECPs and FMRs, which a SUPSHIP is authorized to approve or disapprove. A SUPSHIP may delegate more than one authority to an individual if personnel limitations required.

An HMR package consists of the HMR or ECP and any applicable drawings and/or applicable contract documentation and substitute specification pages. Both the HMR and the ECP are approved by duly authorized persons. The approved ECP is the basis for the HMR.

An FMR package consists of the FMR, the ECP and, as necessary, drawings and/or applicable contract documentation and substitute specification pages. Both the FMR and the ECP are approved by duly authorized persons. The approved ECP is the basis for the FMR.

5.4.7.3.2 HMR Approval Authority

An HMR is the document required by the ACO as authority to implement an approved level III or higher ECP. Only individuals holding HMR approval authority may approve an HMR. HMRs received without an authorized signature are to be returned to the Program Manager.

5.4.7.3.3 FMR Approval Authority

An FMR may be approved and signed only by an individual in SUPSHIP who is delegated such approval authority in writing by the Supervisor. The SUPSHIP letter of authority may specify any desired limitation on authority to approve FMRs.

5.4.7.3.4 ECP Approval Levels

The greater the technical, cost, or schedule impact of a proposed change, the higher the organizational level of approval.

5.4.7.4 Levels of Organization Approval Authority

As noted in NAVSEAINST 4130.12B, the SOM establishes the four levels of organizational authority:

Level I CNO

Level II COMNAVSEA

Level III Program Manager

Level IV SUPSHIP, NSY, or Participating Manager

The following sections describe the standard change approval authority at each of the four organizational levels. SUPSHIPs are authorized to exercise level IV authority for all program managers.

5.4.7.4.1 Level I

The following ECPs require CNO approval:

- All proposed changes to the military characteristics of new construction ships or conversions. Military characteristics encompass all features that are operational in significance, as well as any items specified in the OPNAV instruction detailing the characteristics of the particular ship or class. This includes equipment set forth in the Approved Electronics Equipment List and the Weapons Installation Plan appendices to the characteristics.

- All proposed changes to technical specifications (except the correction of errors and inconsistencies) which would increase the end cost of a ship project in a particular

fiscal year SCN program above the end cost published in the latest CNO-approved Ship Cost Adjustment (SCA) Report.

- All proposed changes to technical specifications (except the correction of errors and inconsistencies) which would delay delivery of a ship beyond the contract delivery date or the most recent NAVSEASYSCOM estimated delivery date, if later than the contract date.

5.4.7.4.2 Level II

The following ECPs require COMNAVSEA approval:

- All proposed changes where an organizational member of a Program Manager Configuration Control Board (CCB) or a change sponsor has filed a reclaimer to a change approval/disapproval action taken by a Program Manager.

- Proposed changes affecting more than one Program Manager where a common decision among all affected Program Managers cannot be reached.

5.4.7.4.3 Level III

The following ECPs require Program Manager approval:

- ECPs originated by a SUPSHIP, a Prospective Commanding Officer (PCO), or a ship acquisition contractor, including subcontractors, that:

    - affect contract delivery date

    - affect contract guarantees or incentives

    - reduce ship or subsystem performance, stability, or primary damage control characteristics beyond specified limits

    - affect contract standardization requirements (e.g., arrangements, components, design requirements)

    - increase cost of operation or maintenance (e.g., affect life cycle cost, reliability, maintainability, interchangeability)

    - affect hull strength, safety, electromagnetic, or underwater acoustic compatibility

    - introduce new logistic support requirements (e.g., parts support and modifications to existing retrofit kits, support equipment, training requirements, personnel, facilities, technical manual)

- require retrofit/backfit in delivered ships to maintain a specified class standardization requirement

- affect an established ship or subsystem interface with an item of GFE

- are PCO-originated and not within the budget established for PCO changes for a specific ship

- change or modify nuclear ships' propulsion plant systems, compartment arrangements, or assigned compartment function as defined in NAVSEAINST C9210.4

- change an entire system where such a change affects weight, or represents a departure from contract drawings, contract specifications, or approved design criteria

- Those ECPs originated by a ship project participating manager, contractor(s), including subcontractors, or supporting Government activities that: affect any technical performance requirements specified in the SPD, including Navy standards in existence on the date of the SPD, whether directly referenced or not; affect an established ship or subsystem interface; affect delivery dates contained in the SPD; or require additional funds beyond those in the latest SPD.

- ECPs originated by all Navy activities other than the activities are addressed above.

5.4.7.4.4 Level IV

ECPs that may be approved at the SUPSHIP level include those ECPs originated by a ship construction or conversion contractor, including subcontractor, and those originated within a SUPSHIP organization by a PCO or by a trial board that:

- do not require higher level approval, as specified above

- are within the changes budget established by the Program Manager via the SPD or and MOA for the particular project

5.4.7.5 Level IV ECPs Which SUPSHIP May Consider Essential

The approval authorities for HMRs and FMRs may designate changes which are considered essential and cannot be deferred for post-delivery accomplishment. When the approval authority for an FMR designates a change as essential, the approval authority will prepare and sign a determination that includes a rationale and justification for the determination. Since essential changes may be issued by unpriced contract modifications in order to permit immediate start of work on the change before pricing, the rationale must include sufficient data to justify the essential category. The authority of the ACO to execute an unpriced modification is limited for fixed-price type contracts. The FMR approval authority is to submit the determination to the ACO.

The following sections cover field-initiated ECPs which may be approved at level IV and, if approved, may be designated essential by the FMR approval authority.

5.4.7.5.1 Correction of Specification Defects

Field changes in this category may be initiated and approved at level IV when a system or component does not operate in accordance with the specifications and where the Government is determined responsible for the deficiency.

The following are examples of changes in this category:

- Modification or replacement of CFM and installations of equipment to obtain correct operation when the deficiency results from an error or omission in the contract drawings or specifications. Such items would not fall within the scope of Section 042, General Administrative Requirements of the 1984 edition of the General Specifications for Ships of the U.S. Navy.

- Modification of the installation of GFE to make the equipment operate correctly when the deficient installation is the result of inaccurate information furnished by the Government on the equipment or installation.

- Modification to correct safety related deficiencies in government specifications and specified systems/equipment.

- Modification of systems already turned over to ship's force where defects discovered in operation are determined to be the responsibility of the Government.

5.4.7.5.2 Submarine Non-Deviation (ND) Program

As a part of the Submarine Safety Program, NAVSEA Headquarters has designated as vital certain non-nuclear systems and areas of nuclear submarines for establishing deep-diving capabilities. Working drawings and other data on these systems and areas are furnished to the contractor and must be followed without deviation, unless deviations are approved by NAVSEA Headquarters.

Upon receipt of an ND drawing or drawing revision, the contractor may choose to request a deviation. If the deviation is approved, the contractor can proceed in the manner requested without further authority as long as the procedure meets the specifications.

Should the contractor elect not to request a deviation or should the request for a deviation be disapproved, the contractor must proceed in strict accordance with the ND drawing. If the ND drawing or portion conflicts with the specification, the SUPSHIP will advise Headquarters that a change in specifications is necessary. Changes in specifications may be required when the ND drawing or revision limits the contractor in the choice of material or the method of performing the work, and requires the contractor to incur additional costs which would not have been required under the contract before issuance of the ND drawing or drawing

revision. The field activity should be alert that the reverse could also happen, by which the requirements could be lessened and the Government could be entitled to a reduction in contract price. In either case, the field activity will notify NAVSEA Headquarters that a specification change is required.

Field changes in this category may be initiated and approved at level IV only under submarine contracts which contain a provision that the Government will furnish working drawings and other data for non-nuclear systems and areas vital to submarine safety.

Field-initiated changes are authorized and will be issued under the following circumstances:

- In order to maintain delivery schedules, the field activity has approved actions in the ND areas before the ND drawing is received. The approved ND drawing, when received, negates the earlier action. An FMR can be issued to cover the work and material made obsolete.

- Work is already in progress under an approved ND drawing when a revised ND drawing is issued which requires considerable rework, additional work, or material. An FMR may be issued to cover the rework or the additional work and material.

- An ND drawing (original issue) requires a particular type or method of installation which is within the scope of the applicable ship specifications but which imposes a restriction resulting in increased contractor costs in comparison with another identified method. The alternate method is one which could have been used within the scope of the specifications but which was not acceptable under the ND drawing requirements.

5.4.7.5.3 Trial Board Items to be Accomplished before Delivery

A field change may be initiated and approved at level IV to cover an item reported by the Trial Board and determined to be Government-responsible by NAVSEA, and which must be accomplished prior to delivery. Each specific Trial Board item covered will be referenced in the contract modification.

5.4.7.5.4 Changes to Accomplish ORDALTs on NAVSEA Equipment

Field changes of this type may be initiated and approved at level IV to accomplish modifications to NAVSEA equipment that are authorized by ORDALTs.

5.4.7.5.5 Correction of GFM

A field change may be initiated and approved at level IV in order to correct defects in material provided by the Government.

5.4.7.5.6 Improvements to Government-Furnished Electronics Equipment

Field changes may be initiated and approved at level IV to accomplish improvements or modernization of Government-furnished electronics equipment pursuant to requirements contained in an electronics field change or in an electronics information bulletin, provided the article in the bulletin contains the reference to authority and the urgency of accomplishment and the funding source.

5.4.7.5.7 Contractor Preparation of Formal ECPs

A FMR may be initiated and approved at level IV when the contractor is requested to submit a formal ECP (regardless of whether or not it was preceded by a preliminary ECP) either under a contract containing a configuration clause or the change proposal clause providing the intent is to categorize the changed work, if approved, as essential. If the changed work is not to be considered essential, the FMR is to be processed as an optional FMR.

5.4.7.5.8 Changes in Provisioning or Allowances

A FMR may be initiated and approved at level IV to adjust the quantitative requirements for provisioning or allowances when the quantities to be changed are part of the configuration baseline.

5.4.7.5.9 Exceptional Means for Approving Field Changes

A FMR may be initiated and approved at level IV when a specific authorization for such a change is contained in a NAVSEAINST or notice and is classified as essential by the authorization. If the change is not classified as essential, it will be considered as an optional change.

5.4.7.5.10 Level IV ECPs Which SUPSHIP Shall Consider Optional

The approval authority for HMRs and FMRs will designate changes which can be deferred for post-delivery accomplishment as optional. The determination that a level IV change is optional establishes a requirement that the ACO must either implement the FMR by a priced contract modification or return it for cancellation.

5.4.7.5.11 Approved Value Engineering (VE) Projects Initiated by Contractors

A VE change proposed by a contractor under a contract containing a VE clause may be approved at level IV after it is approved in accordance with the command’s VE Program. VE changes so initiated will include only those in which the contractor will share in savings resulting from the change.

5.4.7.6 Correction of Deficiencies, Improvements, Assistance for Ship's Force (ASF)

5.4.7.6.1 Correction of Design Deficiencies

The PCO, CO, and ship's force bring to the ship acquisition process additional operational experience which provides constructive additions to the oversight capability of the SUPSHIP

or shipyard commander. Design deficiencies not identified during construction or conversion are often identified later because of this different perspective.

5.4.7.6.2 Habitability Improvements

The detailed ship specifications for construction or conversion provide specific requirements for fulfilling the CNO specified habitability standards for each design. These specifications, along with the approved allowance list for the ship, provide specific identification of material necessary to meet OPNAV-specified standards. Contract language may authorize the PCU to select color schemes where not previously directed, the selection of furniture or furnishings from approved catalogs or lists, and minor arrangement changes. Contractual changes that support habitability improvements desired by the PCO, CO, and ship's force must be limited to the standards specified for the ship by CNO and the flexibility allowed by the ship specifications.

5.4.7.6.3 Industrial Assistance for Ship's Force

Requirements for SCN-funded industrial assistance to the ship's force arise where a ship's force work package is included as part of the total work package. The contract should detail the amount and scope of Assist Ship's Force (ASF) work. Occasionally, however, assistance not covered by the contract may be required. In this circumstance, a field-initiated change may be approved at level IV, provided:

- It would normally be expected to be approved as an alteration after delivery.
- The PM may limit funds, e.g., the price of the change, increase, or decrease is not in excess of $25,000 gross per ship. The change approval maximum of $25,000 per ship will be the initial maximum threshold at contract award. Depending on varying conditions during the ship engineering development and construction, and as conditions warrant, the SUPSHIP can request a desired threshold increase from the cognizant Program Manager, who will approve or disapprove the request.
- It will result in no extension of delivery.
- The price adjustment will be within the limit established below.

The Program Manager will establish a maximum accumulative price increase for each ship over which the SUPSHIP will have full authority. The maximum price increase is not established as a discretionary fund for the PCO or CO.

If level III approval is required, the change will be submitted to the Program Manager.

The Program Manager and SUPSHIP are responsible for execution of construction and conversion contracts. The PCO and CO may advise the commanders and be responsible for the performance of ship's force work. While the responsibility for avoiding excesses such as waste, unauthorized alterations, imposition of personal taste for its own sake, and abuse of

property rests primarily with the Supervisor, the Program Manager and PCO or CO are also responsible for adhering to CNO guidance.

The use of a CO's discretionary allowance from the SCN funding account is prohibited. Habitability items, such as furniture installed in accordance with the ship construction or conversion specifications, will not be removed or replaced solely to achieve a more aesthetically pleasing arrangement.

Funding for keel laying, launching, and commissioning ceremonial expenses for newly constructed or converted ships cannot be used for PCO or CO changes or assistance requests. Expenditures of SCN funds for assistance to ship's force are limited to augmenting the ongoing efforts of the ship's force with labor, ship assistance material, or equipment. It is inappropriate to purchase furniture or furnishings with such funds. ASF funding will not be used for any alteration work, unless approved by the cognizant Program Manager or Supervisor and documented by an appropriate HMR or FMR.

NAVSEA will review all PCO- or CO-identified design deficiencies, requests for assistance for ship's force, and habitability change requests concurrent with SUPSHIP review. The cognizant Program Manager will establish procedures for recording change requests and their subsequent approval or disapproval. Changes accepted will be processed as FMRs or HMRs, as appropriate. The PCO or CO will be advised of the action taken on each request. A separate monetary allowance will not be established for accomplishing changes requested by the PCO or CO.

Contract changes will be processed in accordance with this chapter. The field activity will advise the PCO or CO of these procedures.

5.4.7.7 Level IV Field Changes

5.4.7.7.1 Exceptional Means for Approving Field Changes

A field change may be initiated and approved at level IV when a specific authorization for such a change is contained in a NAVSEAINST or notice and is classified as optional.

5.4.7.7.2 No Cost or Reduced Cost Changes

A field change in this category may be initiated and approved within level IV authority to avoid rip-out or rework or to authorize items which do not conform to the letter of the specifications, provided the change results in cost savings and the installation made is satisfactory for the intended purpose.

A field change may be initiated and approved to relieve the contractor from accomplishing certain specification requirements prior to ship delivery, as permitted by un-starred, contractor-responsible items listed in the Trial Board Report. This authority is to be used only when the accomplishment of the corrective work by the contractor will delay ship delivery and the delay is unacceptable to NAVSEA Headquarters. If execution of a priced supplemental agreement prior to the departure of the ship is not possible, a work scope

understanding is to be reached with the contractor before ship departure. A field-initiated change may be approved at level IV to cover defects and deficiencies discovered during the guarantee period, when correction of such deficiencies or defects is not to be accomplished by the contractor under the contract.

The FMR will indicate which of the above types of changes is involved, since there usually is a limitation of liability for correction of defects during the guarantee period. Normally, the changes under the above authority are processed as waivers; however, when the change is to be processed as an ECP, it will be processed under this authority. This authority may be used to initiate and approve at level IV field changes involving later military specifications or a section of the contract specifications, which simplify machinery items or systems, but do not alter their essential operation. Normally, such changes are processed as deviations; however, if it is felt that the deviation should be a permanent change applicable to future procurements and, therefore, processed as an ECP, it will be processed under this authority.

Field changes covering variances in specifications requirements may be initiated and approved at level IV for a variety of purposes, including:

- editorial corrections to the specifications
- minor plan rearrangements
- amplification of specification wording
- deletion of specification unnecessary requirements

In determining whether to initiate a field change, the FMR approval authority will consider the estimated cost to the Government of processing the change. However, the estimated cost will not in itself constitute cause for non-acceptance.

5.4.7.8 Engineering Change Proposal (ECP) Management

5.4.7.8.1 General

SUPSHIP will prepare and issue local instructions covering the procedures to be followed in the expeditious processing of ECPs and Deviations and Waivers following the guidance in NAVSEAINST 4130.12B and TMIN-SL130-AB-GYD-010/CMP, “Configuration Management Guidance Manual.”

The Supervisor may establish a SUPSHIP Configuration Control Board (SCCB), whose duties and responsibilities will be similar to those of a Configuration Control Board (CCB) established by the Program Manager. The SCCB will be established on a permanent basis. The SUPSHIP will keep the Program Manager informed of any planned or implemented changes.

The SCCB duties include:

- Maintaining the Change Proposal Log and Status Record. Data should include status from receipt of proposed change through issue of the A-Modification.

- Submitting appropriate recommendations to the level IV ECP approval authority regarding:

    - validating that the ECP is at level IV (within SUPSHIP authority)

    - forwarding of an ECP to NAVSEA when level III or higher approval is required

    - approval or disapproval of ECPs within level IV authority

    - disapproval of a contractor-initiated ECP which requires level III or higher approval and its return to the contractor

    - approval of a preliminary ECP and preparation of a formal ECP

    - whether the change should be considered essential or optional

- Returning an ECP to the SUPSHIP organizational component which prepared, reviewed, or analyzed the ECP for additional analysis or information, or for return to the contract when the contractor-initiated ECP information is incomplete

The SCCB membership, when established, will include a chairman, a secretary/recorder, and additional members who will be called upon by the Chairman, as necessary, depending on the complexity and urgency of an ECP. The Supervisor or a designated representative will act in the capacity of a SUPSHIP Change Review Board (SCRB) to resolve differences of opinion between SUPSHIP ECP and FMR approval authorities.

The following sections cover the procedures to be followed in processing ECPs under contracts which contain a configuration clause and those without a configuration clause.

5.4.7.8.2 Contracts Containing a Configuration Clause

5.4.7.8.2.1 General

Contracts which contain a configuration clause invoke the requirements of ANSI/EIA-649 (replaced MIL-STD-973 and EIA/IS-649), ISO 10007, or an acceptable industry standard, including:

a. use of DD Form 1692 or equivalent alternate form

b. use of preliminary and formal ECPs

c. applicability of Class II changes

d. payment to the contractor for preparing ECPs requested by the Government

SUPSHIP will reach an understanding with each contractor holding a contract containing a configuration clause, regarding the local procedures to follow in implementing the clause. The understanding will include:

- the requirement that the contractor will use ANSI/EIA-649 or an acceptable industry standard format in preparing ECPs

- use of preliminary ECPs as a means to recommend changes to the Government when the contractor doubts whether the Government will approve the change. Such a procedure could be used as a cost-saving method

- consideration for the elimination of Class II changes when the configuration control clause is included in a contract

ANSI/EIA-649 (and acceptable industry standards) have superseded MIL-STDs 480 through 483. However, the requirements of these superseded standards are valid for existing contracts which invoke the superseded standards, unless the contract has been modified to revise the requirements.

5.4.7.8.2.2 ECPs Initiated by Contractors

A preliminary ECP will be logged upon receipt. It then will be reviewed by the SUPSHIP organizational component having technical cognizance of the subject matter. The review will be in sufficient depth to establish whether the proposed change is viable, and whether it contains sufficient information to permit a decision by the SCCB regarding the preparation of a formal ECP. The preliminary ECP and the results of the review are then forwarded to the SCCB secretary/recorder for the SCCB action.

A formal ECP will be logged upon receipt. It will then be reviewed and analyzed by the SUPSHIP organizational component having technical cognizance of the subject matter. The review and analysis will include:

- A determination as to whether the format and content of the ECP comply with the contract requirements and whether the ECP contains all information required to make a thorough technical analysis for establishing the impact on ship performance, logistical support, cost, and delivery schedule. ECPs that do not contain the information to permit this analysis are to be returned to the contractor with a notation on additional information required.

- A technical review. This will include the results and comments as to whether the ECP should be considered essential or optional.

The ECP and the analysis report are then forwarded to the SCCB secretary/recorder for SCCB action. The SCCB will process ECPs in accordance with the following requirements:

a. The chairman and each member in attendance will consider the ECP and analysis report and will indicate concurrence or non-concurrence on the acceptability of the change, its classification as essential or optional, and required approval level.

b. ECPs disapproved by the ECP approval authority will be returned to the contractor with an explanation, regardless of the approval level required. Any received from a contractor after such disapproval will be forwarded to the Program Manager with a copy of the ECP and an explanation.

c. The board may recommend to the ECP approval authority that limits on price or delivery impact be placed on a level IV ECP that is recommended for categorization as optional. Such limitations approved by the ECP approval authority will be incorporated in the FMR and may not be exceeded by the ACO when the change is implemented. Similarly, the board may recommend such limitations on a level III or higher optional change. When accepted by the ECP approval authority and included in the HMR, the limitations will be binding on the ACO; however, the ACO may request authorization from the Program Office to exceed the imposed limit on a change by change basis.

d. The board may return an ECP and analysis report to the cognizant SUPSHIP organizational component when it considers the analysis inadequate for determining the recommendations to be made. Similar action may be taken by the board when it considers an ECP incomplete.

After SCCB action, ECPs which the board recommends for approval, and which are within level IV authority, will be forwarded to the SUPSHIP organizational component for preparation of an FMR. The FMR, with the supporting ECP, is then forwarded to the FMR approval authority for approval and signature and routed to the ACO for implementation. The FMR may not exceed the parameters specified in the ECP as to work requirements, classification as essential or optional, or any limitations as to cost or delivery schedule impact. ECPs which the board recommends for approval and require level III or higher approval authority will be forwarded to the Program Manager after approval by the SUPSHIP ECP approval authority. After approval at level III or higher, the ECP will be returned to SUPSHIP with a covering HMR.

A preliminary ECP which falls within level IV authority and which the board considers acceptable is forwarded to the SUPSHIP ECP approval authority for signature. After approval, the ECP is sent to the SUPSHIP organizational component for an FMR covering the preparation of a formal ECP by the contractor. Preliminary ECPs which require level III or higher approval authority will be forwarded to the Program Manager for further processing.

Targets for level III or higher and level IV decision and contractual authorization of class I ECPs should be in accordance with NAVSEAINST 4130.12B and TMIN-SL130-AB-GYD-010/CMP, “Configuration Management Guidance Manual,” as reflected in local instructions.

Class I ECPs are to be tailored to maximize cost-effectiveness, and with all things being equal, processing preference given to justification codes V and R (Value Engineering and Cost Reduction).

In all cases, formal ECPs will be processed in sufficient time to permit the ACO the opportunity of accepting a contractor's price proposal submitted in accordance with the applicable configuration clause.

If a contract contains the configuration management clause, there may be situations when an ECP can be considered a Class II change. In such cases, the determination whether the change is Class I or Class II is made at the time the SUPSHIP ECP approval authority reviews the ECP. FMRs need not be prepared for Class II changes.

5.4.7.8.2.3 ECPs Initiated by SUPSHIP

ECPs initiated by SUPSHIP personnel will be prepared and submitted according to ANSI/EIA-649 or an acceptable industry standard format. The ECPs may be either preliminary or formal.

5.4.7.8.2.4 ECPs Initiated by Headquarters' Activities

ECPs initiated by NAVSEA Headquarters' activities are prepared according to ANSI/EIA-649 or an acceptable industry standard format. All preliminary ECPs approved at level III or higher which require the preparation of a formal ECP by the contractor are to be transmitted to SUPSHIP through a covering HMR, regardless of the activity initiating the preliminary ECP. The HMR is then processed by SUPSHIP in the same manner as any other HMR. When the formal ECP is returned by the contractor to SUPSHIP, it is to be reviewed and processed.

Formal ECPs approved at level III or higher are transmitted to SUPSHIP by a covering HMR. The HMR package includes the HMR and the ECP. Upon receipt, the HMR will be logged and SUPSHIP will review the HMR package to ascertain whether:

a. the change is feasible based on the status of the contractor's material procurement, delivery dates for GFP required for the change, availability of contractor-procured property, and status of construction on the ways and in the shops

b. the change involved unacceptable rip-out, disruption, delay, or cost for accomplishing the change prior to delivery

c. the requirements specified in the HMR are deficient, ambiguous, or incapable of accomplishment by the contractor with the involved workforce and equipment even though subcontractors are used

d. a comparison of the net and gross cost estimates and delivery delay for accomplishing the change prior to and after delivery is preferred

e. the HMR is signed by an authorized person

f. the priority indicator is correct

g. the essential or optional category is correct

h. any limitations specified in the HMR as to cost or delivery impact are realistic and capable of being achieved in contractor negotiations

When the above review indicates that, in the judgment of SUPSHIP, the HMR should either be modified or the change deferred until after delivery of the ship, SUPSHIP will inform the Program Manager. SUPSHIP does not have the authority to cancel, defer, or modify an HMR unless the Program Manager specifically approves it. SUPSHIP does have the responsibility to question the requirements of an HMR when they are inconsistent with local conditions or otherwise considered impractical.

If an HMR requires revision or clarification as the result of SUPSHIP questions following initial submission, the revised HMR should be transmitted to SUPSHIP in writing and signed by the HMR approval authority. After all matters have been resolved with the Program Manager, the HMR, modified as necessary, is transmitted to the ACO with the SUPSHIP estimate to accomplish the change.

5.4.7.8.3 Contracts Without a Configuration Clause

5.4.7.8.3.1 General

Contracts that do not contain a configuration clause include no provisions for contractors to use ANSI/EIA-649 or an acceptable industry standard in submitting ECPs. Such contracts (except boat contracts) should, however, contain a change proposal clause, which requires contractors to submit change proposals when requested by the contracting officer.

SUPSHIP should reach an understanding with contractors regarding:

- Types of changes considered to be engineering changes.
- Use of ANSI/EIA-649 or an acceptable industry standard format for submitting contractor-initiated ECPs and ECPs requested by the contracting officer.
- Use of preliminary ECPs as a means of recommending changes to the Government when the contractor has doubts whether the Government will approve the change. Such a procedure could be used as a cost-saving method.

Class II ECPs are not applicable.

5.4.7.8.3.2 ECPs Initiated by Contractors

When arrangements cannot be made with a contractor for use of ANSI/EIA-649 or an acceptable industry standard format in preparing ECPs, SUPSHIP will convert the contractor's submission to the ANSI/EIA-649 or an acceptable industry standard format prior to SCCB consideration of the ECP.

5.4.7.8.3.3 ECPs Initiated by SUPSHIP

Engineering changes initiated by SUPSHIP personnel will be prepared and submitted in ANSI/EIA-649 or an acceptable industry standard format. ECPs may be either Preliminary or Formal. SUPSHIP procedures for processing ECPs initiated by SUPSHIP personnel and their review by the SCCB will be similar to ECPs initiated by headquarters' activities.

5.4.7.8.3.4 ECPs Initiated by Headquarters' Activities

Prior to presentation to the Program Manager as level III approval authority, all ECPs (regardless of origin) must be in the ANSI/EIA-649 or an acceptable industry standard format. Accordingly, the HMR received by SUPSHIP will be based on an approved ANSI/EIA-649 or an acceptable industry standard format ECP. The HMR package includes the HMR and the approved ECP.

5.4.7.9 Deviations

5.4.7.9.1 General

SUPSHIP can expect to receive contractor requests for deviations, especially when the contractor is procuring material and preparing working drawings. SUPSHIP, therefore, will establish local procedures, in accordance with the requirements of MIL-HDBK-61A or MIL-STD-973 (canceled, but still invoked in some contracts) or an acceptable industry standard that:

- recognizes situations where deviations may be involved
- requires compliance with the configuration baseline requirements, except where a deviation has been authorized
- provides for appropriate control of requests for deviations, to take timely action on such requests, and make an accounting on the status of all requests
- requires the contractor to submit an ECP instead of a request for deviation when, in the opinion of SUPSHIP, the deviation should be incorporated in the requirements for a future contract
- requires ACO review of requests for deviations prior to approval

SUPSHIP will reach an understanding with the contractor regarding the format and content of requests for deviations.

Requirements in this section are not considered contractual since they reflect the minimum data required for evaluation of a request for deviation.

5.4.7.9.2 Approval Authority of SUPSHIP

SUPSHIP may approve a request for a deviation and issue an FMR, if required, when the proposed nonconformance is within the level IV authority for ECPs and FMRs. In instances where the request for a deviation is the direct result of verbal or written direction to the contractor or SUPSHIP from outside the SUPSHIP office, SUPSHIP will send the request to the Program Manager cognizant of the contract for approval and issuance of an HMR, provided the deviation is approved and a contractual requirement is involved.

Only the personnel designated in writing to approve ECPs and FMRs may approve a request for deviation and issue an FMR, when required. Furthermore, only the personnel designated in writing as the approval authority for ECPs may disapprove a request for deviation.

5.4.7.9.3 Procedures for Processing Requests for Deviations

SUPSHIP is to review each request for deviation to ascertain whether:

- The information provided is complete and sufficient for an understanding of the proposed nonconformance.

- The designation as critical, major, or minor is proper. If improper, SUPSHIP will change the designation and notify the contractor.

- The request for deviation should be processed as an ECP. As a general rule, an ECP will be required when, in the judgment of the reviewer, the deviation should be incorporated in the requirements of a future procurement. Additionally, an ECP may be required for a major or critical deviation when only the ECP format will provide all information needed for a decision for approval or disapproval. If the decision is to process the deviation as an ECP, the request for a deviation is to be returned to the contractor for ECP preparation, the cost of which will be borne by the Government. Subsequently, the ECP is to be processed by SUPSHIP in the same manner as any other ECP.

If the deviation is to be approved and SUPSHIP is the approving authority, an FMR may be required to implement a deviation, depending upon the configuration clause in the contract.

If the request for deviation is not within the level IV approval authority, it should be endorsed to the Program Manager. The endorsement is to contain a recommendation as to approval of the request and the rationale for the recommendation. In addition, the endorsement will contain a date by which the Program Manager decision is to be received.

If approval of the request for deviation does not require the issuance of an FMR and subsequent execution of a contract modification (see above), such approval may be granted by either execution of Block 27 on DD Form 1694 or favorable endorsement on the

contractor's request if a letter format is used. Such approval must be executed by an individual holding ECP approval authority only after the ACO has determined that a contract modification is not required to implement the deviation requested by the contractor. If the request is to be disapproved, disapproval can be accomplished by either the completion of Block 27 on DD Form 1694 or by negative endorsement on the contractor's request if a letter format is used.

A follow-up system will be established to ensure the receipt of replies from the Program Manager by the date specified in the SUPSHIP endorsement of level III or higher requests.

SUPSHIP may disapprove a request for a critical or major deviation. In such instances, a copy of the request, with SUPSHIP's disapproval, is to be furnished to the Program Manager. SUPSHIP is to furnish the cognizant TYCOM with a copy of each critical or major deviation for a commissioned ship undergoing conversion at the time the request is forwarded to the Program Manager.

All requests for deviations are to be processed as expeditiously as practical. For critical or major deviations, a thorough analysis will be made of any impact on delivery schedules, as well as costs, cited in the request for deviation. SUPSHIP will furnish the Program Manager with a copy of each authorized minor deviation. Copies of contract modifications authorizing deviations will be forwarded to the Program Manager.

5.4.7.9.4 Records

SUPSHIP is to maintain complete records, including appropriate control records, of all deviation requests and their disposition. Records of approved deviations are to be integrated into the SUPSHIP QA system as the basis for Government acceptance of the ship. A local instruction should define acceptance criteria.

5.4.7.10 Waivers

Excessive numbers of requests for waivers may indicate that there are defects in the contractor's processes that are leading to non-compliant work that may result in the requirement to increase surveillance of the ongoing processes/industrial procedures. The seriousness of the defect/non-compliant item is classified as minor, major, or critical. SUPSHIP procedures should require that, when the incidence of requests for waivers is high, consideration should be given to conduct an audit of the contractor's processes and inspection procedures to ascertain if corrective action is required. The aim is to preclude a high incidence of major or critical requests for waivers, although requests for minor deviations also require consideration.

Processing requirements regarding deviations are generally applicable to waivers.

5.4.8 Engineering Issue Management

The accounting, control, and monitoring of changes (ECPs, Waivers, and Deviations) is the essence of configuration management by SUPSHIP and the Program Manager. Unnecessary changes put contract completion within allocated funding at risk. The establishment of effective local procedures, the training of personnel to carry out the procedures, and effective supervision will result in the approval of only necessary and beneficial changes based on full knowledge of the impact of the changes on cost and delivery schedule and timely implementation of such changes. An adequate monitoring system will provide the Supervisor and Program Manager with visibility regarding all ECPs, HMRs, and FMRs, including those returned to NAVSEA Headquarters for cancellation or for incorporation in the specifications of follow-on procurements.

5.4.8.1 Controlling Changes

One effective means of controlling ECPs, Headquarters Modification Requests (HMRs), and Field Modification Requests (FMRs) is to limit approval and disapproval authority to personnel specifically authorized, in writing, to exercise such authority. A parallel requirement is to process all SUPSHIP and contractor-initiated ECPs through an optional SCCB.

The Supervisor is authorized to delegate authority in writing to specified personnel in an activity, as required, to perform the following functions:

- ECP approval authority
- FMR approval authority
- authority of chairman and members of the SCCB

SUPSHIP will establish local procedures to implement the requirements for management of engineering issues. SUPSHIP will place such limitations on the exercise of authority by persons to whom the above delegations are made as considered necessary to ensure that assigned duties and responsibilities are commensurate with capabilities.

5.4.8.2 Monitoring Changes

A Change Proposal Log and Status Record are being replaced by TSM.

5.4.8.3 Maintaining Government Estimates Current

An obligation is established at the time the FMR or HMR is implemented by means of a contract modification. The obligation for unpriced changes is generally the estimate established for the change prior to the forwarding of the HMR or FMR to the ACO. The administrative control of appropriations requires that the obligation be maintained current. Therefore, the estimate upon which the obligation is based must be reviewed, and the initial

estimate provided to the ACO with the HMR or FMR must be as accurate as feasible at that time.

The following reviews of Government estimates of cost and delivery impact are to be made prior to the issuance of unpriced contract modifications to implement approved HMRs or FMRs:

a. HMRs: after reviews and prior to forwarding the HMR to the ACO for implementation.

b. ECPs requiring level III authorization: by the SCCB prior to transmission to the Program Manager.

c. ECPs requiring level IV authorization: by the analyzer prior to consideration by the SCCB, and by the SCCB prior to recommending approval to the SUPSHIP ECP approval authority. These authorities are to perform a general review of the estimates prior to approval.

d. Contract modifications: As part of the processing of HMRs and FMRs, the negotiator assigned to the case is to ascertain whether historical data indicates a need for revision of the estimates.

Estimates may be modified as the result of the above reviews by:

- FMR approval authority
- SUPSHIP ECP approval authority
- Chairman of the SCCB

5.4.8.4 Local Instructions and Procedures for Control, Monitoring, and Management of Changes

SUPSHIP is to promulgate procedures and instructions to carry out the requirements for the control, monitoring, and management of changes.

Subsequent to the promulgation of local procedures and instructions, reviews are to be conducted to ensure that they are being carried out by all SUPSHIP personnel.

5.4.9 Test Program Management

The testing program organization and management is addressed in Chapter 10, “Test, Trials, Delivery and Guarantee”. Project management team members should familiarize themselves with the requirements for testing and trials specified in the contract. The Total Ship Test Program and Integrated Test Plan are managed by test development directors within the project office who may be supported by ship systems and combat systems personnel from other organizations when tasked by the Program Manager. The contractor’s

Test Task Group (TTG) consists of project personnel who manage the production testing program.

5.4.9.1 Issue Resolution

Test procedures, developed by equipment and systems engineers, are provided as guides for use in determining the achieved performance of each item or system that is to be tested. The Project Test Team Directors will work with the contractor to establish a Test Program Reporting and Resolution System as required by the Ship Construction Test Manual. Test Change Proposals (TCPs) and Test Problem Reports (TPRs) are used to address issues that must be resolved by the TTG. Refer to Chapter 10 for additional information.

5.4.10 Certifications and Other Documents/Reports

The contractor may be required by contract to manage a Certification Coordination Plan for those items that are contractor responsible. The following is a partial listing of the Certifications and Documents or Reports that are required to be completed and presented to INSURV at the commencement of Acceptance Trials and upon delivery as called out in the NAVSEA Certification Manual, INSURV Instructions, and other documents.

- CHT
- potable water
- explosive safety
- navigation lights
- aviation facilities, flight deck lighting, markings, and visual landing aids
- TACAN
- Secure Electronic Information Processing System (SEIPS)/TEMPEST
- Oil Pollution Abatement (OPA) System
- Emergency Air Breathing (EAB) Purity
- weapon systems pointing and firing cutout zones
- degaussing system/compass compensating coil system
- Wind Measuring and Indicating System (WMIS)
- navigation system
- AIMS Mk XII IFF System

- diesel engine inspection
- X-Ray Facilities (AIMD, Medical, Dental)
- conventional ordnance safety review
- Information Assurance (IA) Certification and Accreditation
- Hazards of Electromagnetic Radiation to Personnel (HERP)
- Hazards of Electromagnetic Radiation to Fuel (HERF)/RADHAZ
- Navy Oil Analysis Program (NOAP) Certification
- Ship Electromagnetic Compatibility (ENC)/Electromagnetic Interference (EMI) Assessment
- ship tonnage and admeasure certificate
- hazards to electromagnetic radiation to ordinance (HERO) emission control III
- inclining experiment
- SUBSAFE
- DSS/SOC

There are other regulatory required documents that must be presented to ABS and the USCG prior to delivery of ships that are to be operated by MSC.

5.4.11 Trial Coordination & Conduct

The Project Management Team, working with the contractor's personnel, supports the preparation for the various trials that are planned to demonstrate the ship's readiness to perform its mission. Chapter 10 provides a detailed discussion and guidance for the conduct of trials from Dock Trials through Acceptance Trials. The guidance notes that all trials prior to Acceptance Trials are conducted in preparation for the SUPSHIP to present the ship or submarine to INSURV. The Project Officer will appoint an individual to provide liaison with INSURV well in advance of the trial periods and in accordance with various INSURV instructions. At the conclusion of the trials, a screening conference is conducted to review all trial card deficiencies and assign corrective action to the contractor or the government.

5.4.12 Compartment Completion

One of the more difficult tasks that the Project Management Team encounters is to get deficiencies that are identified during compartment closeout inspections completed in a timely manner to prevent pilferage and damage to previously satisfactory areas and

equipment. The contractor should have a well-defined organization that is dedicated to this significant task, including a tiger team that quickly responds and corrects deficiencies in a minimum possible timeframe in an effort to get “lock out” on spaces that do not require access by production personnel.

Adequate schematics that identify all required outfitting for each compartment must be available to the compartment close out team. Shortages and damage deficiencies are to be logged and tracked in the compartment status database and documented on Trial Cards if corrective action is not completed prior to the arrival of INSURV. The contractor must be prepared to provide INSURV access to all spaces including those noted as having been satisfactorily closed out and are in a “lock out” status.

5.4.13 Integrated Master Schedule (IMS) Analysis

The Project Management Team and ACO should frequently validate progress by conducting a detailed analysis of the contractors and Government requirements that are outlined in the Integrated Master Schedule (IMS) for each project. The IMS should be closely linked with the contractor’s Earned Value Management System (EVMS). A detailed discussion of EVMS is contained in Chapter 7.

5.4.14 Incentive Evaluation Boards

Contracts are awarded that include an incentive for improved results in cost, schedule, or any other area to be incentivized by the Government and that can be monitored by adequate metrics. Incentivized contracts provide significant leverage for the PM, Supervisor and the Project Officer/PMR in an effort to obtain the desired performance results or to further stress to the contractor that the observed performance is not meeting the Government’s expectation. Incentive-type contracts are addressed further in Chapter 3, “Contracting and Contract Administration.” The fee structure should be established by the PCO during pre-award negotiations. Award Fee Board members are designated by the PM and Supervisor. Typically, the PM or Supervisor chairs the Award Fee Board Meetings. The Award Fee Official is normally a designated NAVSEA Representative who considers the Board’s recommendations and makes the final determination as to the percentage (0 – 100%) of the award fee pool that is justified to be awarded based on the contractor’s performance.

5.4.15 Program Reviews

These meetings are used to assess the overall status of the program’s progress, both physical and financial. A contract should specify the frequency of the reviews and in the absence of such a requirement the PM and contractor can arrive at a mutually agreeable schedule. Program Reviews are normally chaired by the PM who expects to have two separate meetings; the first is a government only status meeting to discuss sensitive information, substantive issues, and recommendations for resolution. This is followed by a combined meeting between government and contractor management.

The combined meeting may be divided into two separate reviews, one for the contractor to present a physical progress update followed by the Project Officer/PMR progress assessment. The baseline for the construction progress may be the EVMS. At the conclusion, the PM and the PM designated personnel meet with the contractor's designated personnel to review the status of funding and any cash flow issues by reviewing the overall financial management status.

5.4.16 Nuclear Plant Milestones

The schedule for installation and testing of a nuclear plant varies significantly from a conventional plant. Technical control of all processes is rigorously managed and documented prior to commencing any test in accordance with the planned master testing schedule. Nuclear-powered ships are placed "In Service" between two and four months before start of the first sea trial. Fitting out is performed at the building yard before delivery. Before operations at sea, the ship and crew must undergo a Pre-Critical Reactor Safeguard Examination and Fast Cruise. A nuclear-powered ship is normally placed "In Commission, Special" or "In Commission" on delivery. The SUPSHIP is responsible for recommending dates to COMNAVSEA for placing the ship In Service, Special; In Service; In Commission, Special; or In Commission as applicable. Nuclear-powered ships undergoing overhaul, conversion, or nuclear refueling normally remain In Commission with a crew assigned. For nuclear-powered ships, following U.S. Navy Crew Certification, BT tests requiring full power can be performed.

5.5 Production Surveillance and Progressing

Appendix 5-A, NAVSEA ltr 5000, Ser 04Z/055 of 5 May 08, addresses the concerns of senior Navy leadership regarding the different processes the SUPSHIPs utilize for physically progressing Navy ships and directs the implementation of a standard physical progressing methodology. This section describes the standard methodology developed by the SUPSHIP community as provided in enclosure (1) to Appendix 5-A.

In accordance with FAR 42.11 (Production Surveillance and Reporting), the Government must maintain adequate surveillance of contractor performance in order to protect its interests. Production surveillance is the contract administration function for determining contractor progress and identifying any factors that may delay contract performance. It involves Government review of the contractor's performance plans, integrated master schedule, management controls, and industrial processes, as well as an analysis of the contractor's actual performance under them. In a broader sense, production surveillance also includes quality assurance, engineering, safety, and environmental matters; these topics are addressed elsewhere in this manual.

FAR 42.1104 requires the contract administration office (SUPSHIP) to determine the extent of production surveillance on the basis of:

- Criticality (degree of importance to the Government) assigned by the PCO (see FAR 42.1105)

- Consideration of the following factors:
    - contract requirements for reporting production progress and performance
    - contractor's performance schedule
    - contractor's production plan
    - contractor's history of contract performance
    - contractor's experience with contract supplies or services
    - contractor's financial capability
    - any supplementary written instructions from the PCO

For SUPSHIPs, production surveillance of shipbuilding contracts primarily focuses on three management tools:

1. Contractor's progress assessment and Earned Value Management Systems (EVMS)
2. Contractor's Integrated Master Schedule (IMS) and other production and test schedules
3. Work progress assessment performed by the SUPSHIP

These tools should be used together to develop an assessment of contractor performance. See Chapter 7 for a more detailed discussion of Earned Value Management and the IMS.

5.5.1 Work Progress Assessment

Work progressing is the process of measuring a contractor's actual (physical) progress. It differs from EVM progress in that it is based on the observation of work performed rather than an accounting of accrued charges. Work progressing is a critical element for successful project management and should provide a reliable means for assessing adherence to the planned sequencing and accomplishment of work. For DoD acquisition programs, including ship construction projects, planned progress is established by the Performance Measurement Baseline (PMB) (see section 7.5.2.5.2) and the more detailed Integrated Master Schedule (IMS). The IMS is an integrated, networked schedule containing all of the detailed discrete work packages and lower level tasks or activities necessary to support the project. A key link in this process is the contractor's management of subcontractors and material and equipment procurement to meet the delivery dates specified in the IMS.

Ship construction projects are obviously large and complex, encompassing ten's of thousands of individual work packages or tasks. Shipbuilding contractors will typically have a dedicated progressing group that tracks the status and progress of all open work packages in the IMS. It would be impractical for a SUPSHIP to create a similar group within its own organization for the sole purpose of developing an independent measure of contractor

progress to that level of detail. Moreover, FAR 42.1104 states that contract administration offices (SUPSHIPs) shall make maximum use of any “reliable contractor production control or data management systems”.

This approach will be outlined in a progress assessment plan developed by each SUPSHIP to ensure consistent application across all construction contracts.

5.5.2 SUPSHIP Work Progressing Responsibilities

SUPSHIPs are assigned two primary responsibilities with respect to work progressing of contracts under their cognizance:

1. On a monthly basis, develop an independent estimate of overall contract progress (by hull).

2. Conduct routine monitoring and assessment of the contractor’s work progressing system.

The figure below provides an overview of the measures used for each of these tasks:

	Design	**Construction**	
		Build	Test/Trials
SUPSHIP Independent Estimate of Overall Progress	Completion of: Key Phases and Products	Weighted values for completing: unit/module/block phases	Weighted values for: Compartment closeout Tests Trial cards Major events
SUPSHIP Assessment of Contractor's Physical Progressing System	Not Applicable	Comparison of SUPSHIP and contractor's progressing of sampled open work packages	

5.5.2.1 SUPSHIP Independent Assessment of Overall Contract Progress

SUPSHIP Independent Assessment of Overall Contract Progress

It is COMNAVSEASYSCOM policy as HCA that SUPSHIPs, in performing their responsibilities for contract administration, perform an independent assessment of the contractor’s progress. The assessment should utilize a stand alone methodology that is separate and distinct from the EVMS, but that can be used to validate the contractor’s monthly progress reports and metrics pertaining to design and construction contracts. Contract type, maturity of the multi-hull product line, and relative experience of SUPSHIP personnel resources are all factors in determining the level of detail involved in performing physical progressing. Care must be given in making this determination such that the process is efficient and meaningful and that the value to the government is commensurate with the

effort expended. Based on the factors described in FAR 42.1104, an appropriate independent work progress approach will be performed.

The following sections describe the standard methodology to be employed for this purpose.

Evaluation of Design Progress

The evaluation system for analysis of design progress is to be based on key phases and products of the design process. The assessment should include physical checks of the design work. Key phases and products to be used include drawings, long lead time material, design specifications, zone disclosures, design reviews, modeling, extractions, or other breakdown of work that is suitable.

Example: The evaluation system for analysis of design may be based on a simple "spot check" process for three distinct areas:

1. Drawing Status: Utilizing the contractor's drawing schedule for total drawings by SWBS, randomly select a sample size based on the number of drawings reported to have been started.

   Progress Criteria: Give or allocate performance as indicated below:

   a. total drawings sampled

   b. number reported started but no visible progress: 0%

   c. number where there is actual progress observed: 50%

   d. number of drawings signed/approved in the Title Block: 100%

2. Long Lead Time Material (LLTM): Utilizing the contractor's and government approved list of material identified as long lead time: percent completed will be based on total purchase orders issued for LLTM items divided by the total number of required LLTM items on the list. (Example: one purchase order issued for one of ten required LLTM items would be assessed as 10% complete.)

3. Specification Package Development: The total number of specification packages completed divided by the total number of specification packages required.

Evaluation of Construction Progress

Physical progress for construction is measured using an independent, "event-driven" process. The process described below refers to a single construction phase that includes all construction, testing and trials. SUPSHIPs may choose to further divide construction into pre-/post- float-off phases, construction/testing phases, or some other phasing of work that is more suitable for a given construction contract.

Process for Determining Construction Progress

This process is based on:

1. Measuring unit construction based on weighted values for the unit and the associated construction tasks necessary to complete the unit and integrate it into modules or blocks.

2. Assigning progress values for:

    a. Achieving key milestones and major events

    b. Completing compartment close-out

    c. Completing testing and trials

3. Summing the progress values determined in steps 1 and 2

Figure 5-1 provides a generic construction progress model for a ship constructed in four modules with each module consisting of the identified number of units. Each unit is assigned a weighted value relative to its contribution to the completion of the completely assembled module. The key events associated with the construction of each unit are also assigned a value relative to the effort required to complete construction and integration of the unit into its module.

The lower portion of Figure 5-1 shows a method for assessing the contribution to overall progress based on completion of ship testing and compartment close-out, as well as sample milestones and major events that would be assigned progress values based on completion.

Figure 5-1 Generic Model for Estimating Overall Ship Progress

Module	Unit Number	Unit Weight	Startup for Fabrication	Complete Fabrication	Complete Blast & Prime	Complete Unit Fit-up	Complete Outfitting	Assembly Erection	Complete Unit Weld-out	Module Integration	SOS %	Total Complete
			0.1	0.15	0.05	0.1	0.2	0.2	0.15	0.05		
Module A												
A	100	0.2586207	0.02586	0.03879	0.01293	0.02586	0.05172	0.05172	0.03879	0.01293		
A	101	0.2586207	0.02586	0.03879	0.01293	0.02586	0.05172	0.05172	0.03879	0.01293		
A	102	0.2586207	0.02586	0.03879	0.01293	0.02586	0.05172	0.05172	0.03879	0.01293		
?	?	0.2586207	0.02586	0.03879	0.01293	0.02586	0.05172	0.05172	0.03879	0.01293		
?	?	0.2586207	0.02586	0.03879	0.01293	0.02586	0.05172	0.05172	0.03879	0.01293		
A	157	0.2586207	0.02586	0.03879	0.01293	0.02586	0.05172	0.05172	0.03879	0.01293		
Module B												
B	200	0.6896552	0.06897	0.10345	0.03448	0.06897	0.13793	0.13793	0.10345	0.03448		
B	201	0.6896552	0.06897	0.10345	0.03448	0.06897	0.13793	0.13793	0.10345	0.03448		
B	202	0.6896552	0.06897	0.10345	0.03448	0.06897	0.13793	0.13793	0.10345	0.03448		
?	?	0.6896552	0.06897	0.10345	0.03448	0.06897	0.13793	0.13793	0.10345	0.03448		
?	?	0.6896552	0.06897	0.10345	0.03448	0.06897	0.13793	0.13793	0.10345	0.03448		
B	228	0.6896552	0.06897	0.10345	0.03448	0.06897	0.13793	0.13793	0.10345	0.03448		
Module C												
C	300	0.3846154	0.03846	0.05769	0.01923	0.03846	0.07692	0.07692	0.05769	0.01923		
C	301	0.3846154	0.03846	0.05769	0.01923	0.03846	0.07692	0.07692	0.05769	0.01923		
C	302	0.3846154	0.03846	0.05769	0.01923	0.03846	0.07692	0.07692	0.05769	0.01923		
?	?	0.3846154	0.03846	0.05769	0.01923	0.03846	0.07692	0.07692	0.05769	0.01923		
?	?	0.3846154	0.03846	0.05769	0.01923	0.03846	0.07692	0.07692	0.05769	0.01923		
C	338	0.3846154	0.03846	0.05769	0.01923	0.03846	0.07692	0.07692	0.05769	0.01923		
Module D												
D	400	0.4166667	0.04167	0.06250	0.02083	0.04167	0.08333	0.08333	0.06250	0.02083		
D	401	0.4166667	0.04167	0.06250	0.02083	0.04167	0.08333	0.08333	0.06250	0.02083		
D	402	0.4166667	0.04167	0.06250	0.02083	0.04167	0.08333	0.08333	0.06250	0.02083		
?	?	0.4166667	0.04167	0.06250	0.02083	0.04167	0.08333	0.08333	0.06250	0.02083		
?	?	0.4166667	0.04167	0.06250	0.02083	0.04167	0.08333	0.08333	0.06250	0.02083		
D	447	0.4166667	0.04167	0.06250	0.02083	0.04167	0.08333	0.08333	0.06250	0.02083		

Module	
A	15%
B	20%
C	15%
D	20%
	70%

System Test	10	Nr Tests Comp / Nr Tests Sked
Major Events	10	e.g.: Keel laying, float-off, main engine L/O, dock trials, Aegis L/O, criticality, B/T, A/T
Compt Cose-out	10	Nr Compts Completed / Total Nr Compts
	30%	

5.5.2.2 SUPSHIP Assessment of Contractor's Physical Progressing System

This section describes an acceptable methodology to assess a contractor's physical progressing system. It is based on a sampling of open work packages in which the contractor's estimate for completed work is compared with a SUPSHIP estimate for the same work. It is intended that this assessment be used only for ship construction and not for the associated design effort.

A typical work progress assessment methodology involves the following basic steps:

1. Select a sampling of open work packages in accordance with the sampling plan.
2. Identify the elements of work involved in each work package.
3. Visit worksites and assess physical progress for the selected work packages.
4. Compare and discuss SUPSHIP and contractor work progress data.
5. Analyze results to determine adequacy of contractor's progressing system.

A. Preliminary work:

1. Review contractor's written procedures and processes for work progressing, including any standards or progressing rules in use. Resolve any questions or disputed methodologies with contractor.
2. Train SUPSHIP personnel in the contractor's progressing methodology.
3. Develop a sampling plan that provides for selection of open work packages and provides for increased or reduced sampling based on historical results.
4. Develop a schedule for conducting assessments either in conjunction with the contractor's progressing of the selected work packages, or as close as possible to that time.

B. Guidelines for selecting random sample

Select work packages in accordance with the following sampling plan:

Sampling Frequency: Monthly, except as provided in 5.5.2.1.F.2.

Sampling Timing: Ideally, sampling should occur at approximately the same time that the contractor is conducting physical progressing of the sampled work packages.

Sample Work Package Criteria: Work packages selected for each sampling period should meet the following criteria:

1. Contractor has "opened" work package to accept charges and work has begun.

2. Contractor employs “% complete” methodology for estimating physical progress (i.e., exclude work packages for which the contractor uses a “0/100”, “50/50”, or Level of Effort progressing methodology).

3. Sampled collection of work packages should initially represent a variety of trades, ship systems, units (this may subsequently be modified to focus on areas with large disparities in contractor and government estimates).

Sample Size: Sample size should be 1% of the work packages meeting the criteria above, and no less than 30 work packages per sampling period. See figure below.

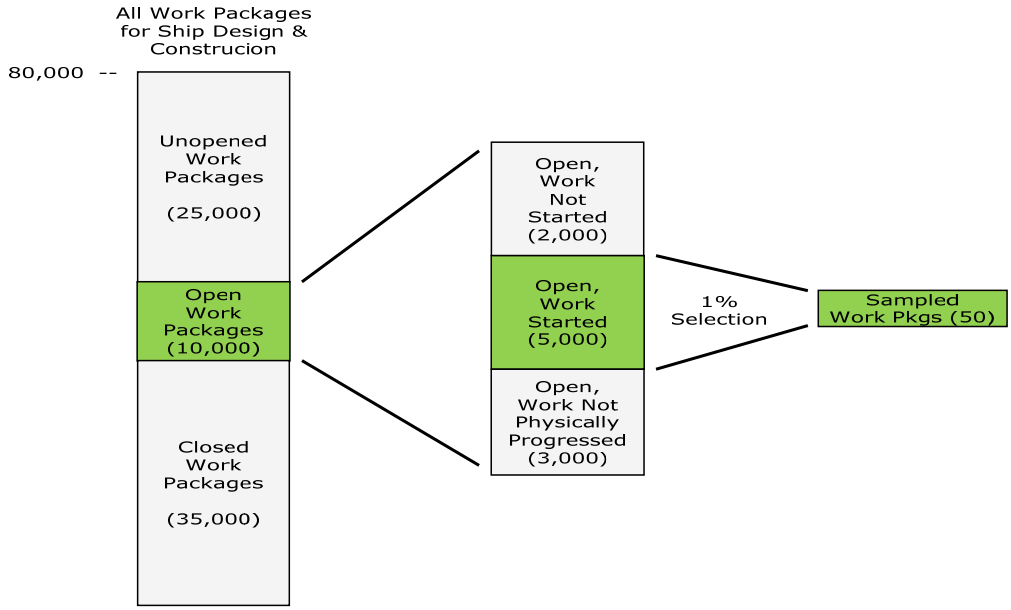

Diagram of Sample Work Package Selection
(Not to scale)

C. Guidelines for identifying elements of work involved in work package

1. Review drawings and work package.

2. Review any available contractor labor estimate for complete work package. If contractor labor estimate is not available, utilize either budgeted labor in EVMS or develop an independent estimate for total labor required.

3. Determine worksite(s) for work package.

D. Guidelines for assessing work package progress

1. Visit worksites for selected work packages.

2. Assess work performed for each element of work in the work package.

3. Apply contractor progressing rules to selected work packages to determine overall percent progress for package. Where contractor's progressing methods are deficient, apply best SUPSHIP practices for estimating physical progress.

E. Contractor discussion/comparison

1. Review progressing results with contractor for each sampled work package.

2. For significant differences, determine sources for those differences between contractor and SUPSHIP estimates.

3. SUPSHIP and contractor review and revise progress estimate.

4. Record SUPSHIP and contractor progress estimates, as well as the estimated labor required to accomplish the entire work package.

F. Analyze results

1. Use the following formula to determine the average progress variance between the contractor and SUPSHIP:

$$\frac{\sum_{n=1}^{N}(CP_n - SP_n)TL_n}{\sum_{n=1}^{N}TL_n} = \frac{Total\_Labor\_Performed}{Total\_Labar\_\mathrm{Re}quired} = \text{Average Progress Variance}$$

Where, CP_n = Contractor's Progress (%) for work package ***n***

SP_n = SUPSHIP's Progress (%) for work package ***n***

TL_n = Total Labor required to perform work package ***n***

N = Sample size (number of work packages)

Note: This formula yields a net variance for all sampled work packages. In other words, for two work packages of the same size, if the difference between contractor and SUPSHIP progressing is 15% high on one package and 15% low on the other, the average process variance would be zero.

2. If the Progressing Variance is:

Less than 3% for 3 consecutive progressing periods: Reduce sampling interval to quarterly.

Less than 5%: Continue normal sampling.

Greater than 5%: Work with contractor to identify source of disparities in SUPSHIP and contractor progressing estimates. Focus future sampling in any problem areas (i.e., particular trade, types of units, systems, estimating methodology, etc.).

5.6 Delays in Performance

The Project Office must take timely and necessary action to avoid government caused delays in contract performance. These delays can have significant impact on the contractor's planned schedule and production processes with the potential for cost overruns, delayed delivery, contractor entitlement to equitable adjustments in the contract price, or result in substantiation of a contractor claim. In general, the contractor bears the risk of both time and cost for delays, but is excused for delays caused by factors for which the contractor is not responsible.

5.6.1 Excusable Delays

In most cases, the contractor must bear the cost impact of excusable delays. In a contractor's facility, the Government usually will compensate the contractor only for the cost of services provided for the benefit of the crew of the vessel, and no other costs. The Government, however, will compensate the contractor for both the time and cost impact of delays caused by the Government.

Generally, the contractor is not liable for any excess costs if failure to perform the contract arises from causes beyond the control and without the fault or negligence of the contractor. "Fault or negligence" deals with acts or omissions of the contractor which cause delay. Examples of events beyond the contractor's control and without the contractor's fault or negligence may include:

a. Acts of God or of a public enemy. An "Act of God" has been defined as a "singular, unexpected, and irregular occurrence of a force of nature."

b. Acts of Government in either its sovereign or contractual capacity:

   (1) Contractual Acts. For a contractor to be excused by an act of the Government in its contractual capacity, the contractor must show that delay resulted from the Government's failure to perform its express or implied contractual duties.

   (2) Sovereign Acts. Sovereign acts which delay the contractor's performance may be grounds for excusable delays. In general, however, when the Government's acts are for the general public good and are indirect in nature, the contractor is not excused for any resultant delay.

   (3) Strikes. In order to obtain an excusable delay for a strike, a contractor must prove that it acted reasonably by not wrongfully precipitating or prolonging the strike and took steps to avoid its effect. In the absence of a strike or other enumerated cause of delay, a contractor is generally not excused for labor difficulties.

c. Unusually severe weather. Normally, proof that weather is unusually severe is accomplished through the comparison of the United States weather statistics for past periods in the area with those recorded during the period of performance. When weather conditions are abnormal and unusually severe in their effect on the particular type of contract work being performed, the contractor may be entitled to excusable delay. In cases where the nature of the work requires specific environmental conditions and when the work is delayed because of weather conditions, the delays are excusable to the extent that the weather conditions exceed the normal weather delays contemplated for the period of the performance.

d. Fires

e. Floods

f. Epidemics

g. Quarantine restrictions

h. Freight embargoes

i. Bomb threats or terrorist action

In order for a contractor to be entitled to an excusable delay, the matter of whether the contractor could have foreseen the cause of the delay is considered regardless of any excusable factors. If a delay is caused by a subcontractor and if the delay is beyond the control of both the contractor and subcontractor and without the fault or negligence of either, the contractor is excused for the delay unless the subcontracted supplies or services were obtainable from other sources in sufficient time for the contractor to meet the required delivery schedule. Delays caused by sole source subcontractors, even those designated by the Government, do not qualify for excusable delays if the subcontractor is at fault. When the Government directs the installation of a sole source item, it represents only that the requirements of the contract can be met by using that item; however, such representation is predicated on the assumption that the item has been properly manufactured and timely delivered by the vendor and that it will be installed properly and timely by the contractor.

5.6.2 Non-Excusable Delays

Contractors are typically held responsible for subcontractor delays and delays caused by insufficient working capital. Subcontractor delays involve non-excusable delays caused by a shipyard's own subcontractors. A shipyard assumes a non-delegable duty to perform a construction contract, and it is generally no excuse to allege that a shipyard has been delayed by its own subcontractors. The shipyard can, of course, look to the subcontractor for any damages incurred as a result of such delay.

Neither does a lack of sufficient working capital constitute an excusable cause of delay. A shipyard is expected to have the financial ability to perform the contract. The shipyard's

delay or failure to perform resulting from its inability to obtain money is ordinarily inexcusable regardless of the reason; whether due to an economic downturn, general financial distress, or failure of a third party on which it relied upon in furnishing support.

5.6.3 Compensable Delays

A contractor's ability to recover increased costs resulting from delays will depend on the cause of the delay, the nature of its impact on the contractor, and the contractual provisions dealing with compensation for delays. Generally, compensable delays result from government action or inaction, such as either changes in the work, the existence of a differing worksite condition than stated in the contract, an unreasonable suspension of work, or failure of the Government to perform its duties under the contract.

5.6.3.1 Government Delay of Work

If the contracting officer orders the contractor to suspend or stop work, the contractor will almost always be entitled to an equitable adjustment in both contract price and delivery schedule to compensate for the impact on contract performance. In other situations, the Government will be at fault if it breaches its implied duty not to hinder or interfere with the contractor's performance or its implied duty to cooperate with the contractor. Generally, the Government will be at fault when it is responsible for:

a. delays in making the worksite available

b. delays caused by interference with the contractor's work

c. delays in providing required Government reviews and approvals

d. delays in providing funding

e. delays in performing required inspection of work

f. delays in issuing changes

g. delays in furnishing GFP, GFM, or GFI

h. delays which are unreasonable in duration

i. delays caused by conflicting or defective Government specifications

5.6.3.2 Excusable Delay Relief

A contractor is not entitled to relief upon the mere occurrence of an event which qualifies as an excusable delay. Even though a contractor can establish that an event or occurrence was unforeseeable, beyond its control, and occurred without its fault or negligence, the contractor is not entitled to an excusable delay unless the contractor can prove that the time lost resulted in delay to the completion of the contract. The contractor must establish the

number of days of relief to which the contractor is entitled. Events may not be beyond the contractor's control if the contractor could have overcome the effects of the event, and further, when the event is considered foreseeable, the contractor may be held responsible for making alternative arrangements for performance.

The amount of equitable adjustment recoverable by a contractor is generally equal to the costs that were greater than those which would have been incurred without the compensable delay. Cost increases attributable to the delay, such as those associated with increased labor rates, time-related labor, equipment, insurance and overhead, if any, are usually accepted and negotiated. Acceleration costs are also recoverable against the Government if they are incurred in mitigation of the effects of a compensable delay. When reviewing a contractor's request for delay or acceleration costs, particularly unabsorbed overhead, it is helpful to confer with legal counsel in order to ensure application of the appropriate criteria to the specific alleged entitlement.

5.6.4 Concurrent Delay

Generally, in a case where the Government and the contractor are each responsible for delay in completing the work, the Government is barred from assessing liquidated damages against the contractor and the contractor is precluded from recovering delay damages. Concurrent delay does not bar extension of time, but it does bar monetary compensation for, among others, daily fixed overhead costs because such costs would have been on account of the concurrent delay even if the Government responsible delay had not occurred.

5.7 Project Office Considerations

5.7.1 Work Stoppage

The contractor cannot be directed to stop work by anyone other than the ACO or another authorized contracting officer. The only exception to this requirement is to protect the safety of personnel or prevent the loss of or destruction of property and equipment. Because the Government is a self-insurer or may otherwise be liable for some portion of large insurance claims, the Government has a vested interest in any conditions or actions of the contractor or the contractor's employees which may lead to an insurance claim. The Government is liable for the loss or damage of Government property in excess of the limits specified in the contract. Further, the Government may be liable in situations where third party claims against the contractor exceed the contractor's commercial insurance coverage. In situations where unsafe conditions or contractor work practices are observed which could lead to imminent injury to personnel, or loss of life, or where the loss/damage to Government property is imminent and economically significant, the Government employee should act immediately to stop the work in progress or otherwise correct or rectify the cause of the problem.

5.7.2 Safety, Fire Prevention, and Housekeeping

The SUPSHIP Manager for Environment, Safety and Health monitors the contractor's compliance with contract safety requirements in accordance with FAR 42.302 (39). Although SUPSHIP's primary function is contract oversight, it may be necessary to report serious or flagrant violations of safety requirements to the Occupational Safety and Health Administration (OSHA). As discussed in Chapter 12, "Environmental, Safety, and Health," any Government employee that observes an accident, a fire, an unsafe act, or unsafe or hazardous conditions on or around the worksite should immediately inform the SUPSHIP Safety Office and provide as many pertinent details as possible. SUPSHIP will investigate all incidents and issue the required reports. If it is determined a Judge Advocate General (JAG) is required, all Government personnel must cooperate fully with the JAG investigators.

In addition to the Federal, state, and local laws and ordinances, contract clauses require the contractor to exercise reasonable care to protect the vessel from fire and damage. These clauses also require the contractor to keep the worksites on the vessel free from the accumulation of waste material or rubbish caused by its employees or the work, and at the completion of the work, to remove all rubbish from and about the site of the work and leave the work in its immediate vicinity "broom clean" unless more exactly specified in the specification.

5.7.3 Fire Watches

The contractor is required by the OSH Act of 1970, reference (n), and 29 CFR Part 1915, reference (o), to provide fully-qualified fire watches for hot work under specific conditions. The contractor is always responsible for the safety of the ship during construction and in this regard detailed fire watch procedures should be in place. SUPSHIP employees should be aware of hot work procedures and certifications that spaces are safe for hot work. The project team should be ever vigilant and conduct periodic checks of hot worksites to verify that properly trained fire watches are stationed at all required locations and that they are alert during all hot work operations and are present for the prescribed period after hot work has been discontinued. Following delivery and crew move aboard, the ship's commanding officer may desire to supplement the contractor's system with additional fire watches or establish a fire watch monitoring system until Final Acceptance Trials are completed and the ship transitions to Fleet operations.

5.7.4 Quality Assurance

The Contract Administration Quality Assurance Program is detailed in Chapter 9, "Contract Administration Quality Assurance Program (CAQAP)." All SUPSHIP Project Office personnel should read and familiarize themselves with contract and FAR requirements for ensuring the contractor has an effective and active Quality Assurance Program.

5.7.5 Hazardous Material

Contracts for ship construction programs require the contractor to strictly comply with all Federal, State and Local regulations concerning Hazardous Material (HM) and the handling of Hazardous Waste (HW). The use of any material or component that is considered to be hazardous to personnel or a threat to the environment is to be avoided in construction programs to the maximum extent possible. SOM Chapter 12, “Environmental, Safety, and Health,” outlines the policy and SUPSHIP oversight functions for environmental matters.

5.7.6 Ship's Selected Records (SSR)

Ship's Selected Records (SSRs) contain significant technical information on the ship's operation, maintenance, supply, and other logistic requirements and are maintained current throughout the life cycle of the ship. SSRs are comprised of:

Selected Record Drawings (SRD’s): Consist of basic hull, mechanical, and equipment drawings and are selected for their reference value for operational, maintenance, training, and consulting purposes.

Selected Record Data: Consist of basic technical information relative to certain shipboard arrangements, equipment, and systems under the cognizance of NAVSEA that is selected because of its value for operational, maintenance, training, and consulting purposes.

Allowance Lists: Depict authorized onboard repair parts and equipage support of shipboard equipment and components and are published as a Coordinated Ships Allowance List (COSAL). The COSAL also includes authorization for non-component-related equipage and miscellaneous categories of material.

Concurrent with training and upon sail away, the ship's force requires this documentation for the safe operation of the ship. The delivery of this documentation is required before the TYCOM will accept delivery of the ship to the Fleet.

5.7.7 Documentation

The contracting officer is required to maintain contract files as prescribed in FAR 4.802. The ACO is required to document each contract transaction sufficiently to provide a complete history of actions taken. In general, the ACO's files provide background information supporting actions taken, provide information for reviews and investigations, and document the essential facts to support potential litigation. Chapter 3, “Contracting and Contract Administration,” addresses these documentation requirements in greater detail.

The significant events documentation by the Project Office is provided to the contracting officer as “official documents” that are then inserted into the contract files upon completion of each project.

5.7.8 Care and Protection of GFE and CFE

The Project Management Team must be attentive to the contractor's action to protect equipment and components from damage or contamination prior to production testing and subsequently if the equipment has been placed in an inactive maintenance condition. The contract should require protection of both GFE and CFE from damage. Daily safety walk through of the ship is an ideal time to observe discrepancies that require corrective action by the production team.

5.7.9 Nunn-McCurdy Act

It is important for SUPSHIP personnel to recognize that significant cost over-runs may result in a breach of 10 U.S.C. 2433, reference (p), commonly referred to as the Nunn-McCurdy Act. This law imposes quarterly Unit Cost Reporting (UCR) requirements on program managers for major defense acquisition programs (MDAPs) and requires Congressional notification when a program exceeds specific thresholds. UCR assesses costs based on Program Acquisition Unit Cost (PAUC) and the Average Procurement Unit Cost (APUC), as described by the following equations:

$$\text{PAUC} = \frac{\text{Total cost for development, procurement, and program-specific military construction}}{\text{Number of end items to be produced}}$$

$$\text{APUC} = \frac{\text{Total funds for procurement}}{\text{Number of end items to be procured}}$$

Two thresholds have been established, one for Significant Cost Growth and one for Critical Cost Growth. If the PAUC or APUC exceed either of these thresholds, a breach of the Nunn-McCurdy Act has occurred.

Significant Cost Growth: (i) at least 15% over the PAUC or APUC for the program as shown in the current Baseline Estimate.

- or -

(ii) at least 30% over the PAUC or APUC for the program as shown in the original Baseline Estimate.

Critical Cost Growth (i) at least 25% over the PAUC or APUC for the program as shown in the current Baseline Estimate.

- or -

(ii) at least 50% over the PAUC or APUC for the program as shown in the original Baseline Estimate.

If either threshold is exceeded, the service Secretary is required to notify Congress. If the Critical Cost Growth threshold is exceeded, the service Secretary is required to conduct an assessment of the projected cost of completing the program and must certify that the program is essential to national security.

Although UCR is a program manager responsibility, the SUPSHIP Program Manager's Representative (PMR) must monitor EVMS data and advise the PM if a potential breach of Nunn-McCurdy requirements is indicated.

5.8 Post Delivery, Fleet Maintenance and Modernization

5.8.1 General

In order to provide the fleet with the most up-to-date ship system capabilities, new construction efforts currently employ modernization during the post delivery period. Coordination of this effort is critical to ensuring establishment of the proper configuration baseline for future maintenance and modernization of Navy ships.

5.8.2 Post Delivery Configuration Management

The documentation of the "as built" configuration of the ship, at delivery to the Fleet, is the foundation for the Fleet Maintenance and Modernization processes. The extensive data that is provided as deliverables from the construction contract is utilized by the Navy's maintenance infrastructure (Organizational, Intermediate, and Depot Level Maintenance) to sustain the ship's material readiness condition. SUPSHIP is accountable for validating that the prime contractor has provided this data in accordance with the contract. A Government team consisting of SUPSHIP, the Program Manager, the assigned Configuration Data Manager (CDM), Board of Inspection and Survey (INSURV), and the Integrated Logistic Support (ILS) Manager work cooperatively to validate that all equipment, systems, and ship logistic support provided during the construction phase are in compliance with the contract and Government requirements. This pre-delivery team may also specify any areas of non-compliance that can be addressed post-delivery. The "as built" configuration of the ship at delivery, including applicable logistic information, is documented in the Ship's Selected Records (SSRs).

Upon delivery, the NAVSEA In-Service Ship Program Manager assumes life cycle logistic support responsibility and utilizes the "as delivered" documentation, while working with the NAVSEA assigned Configuration Data Manager, to maintain an accurate database of the ship's configuration. This documentation is extensively used for onboard training and emergency response purposes in addition to its use in meeting the maintenance and modernization requirements until the ship is decommissioned. Following delivery to the Fleet, the Fleet Modernization Program (FMP), in accordance with the Fleet's SHIPMAIN process, identifies when a change has been approved that will modify the ship's configuration. The PM and CDM must ensure that any configuration changes are entered

into the CDM's database and that all logistic support changes are current. In making configuration changes on a ship, the Navy maintains control of the process via the FMP.

Throughout the life cycle of a ship, not only is preventative and corrective maintenance performed, but through the Fleet Modernization Program, the configuration of the ship changes with the installation of new systems and components to improve a ship's mission capability, operational performance, reliability or maintainability. The activities that execute or oversee the Fleet's maintenance and modernization, including SUPSHIPs and private contractors, Naval Shipyards, afloat and Shore Intermediate Maintenance Activities, and ship's force, are required to assist the PM and CDM in maintaining the true ship's configuration by updating records and data to reflect the "as released" configuration of the ship. Fleet operations and maintenance support is dependent on this data to ensure timely and accurate logistics support.

5.8.3 SUPSHIP Role in Fleet Maintenance

The Joint Fleet Maintenance Manual (JFMM) is a compendium of applicable directives and policies that cover virtually every aspect of planning and executing ship availabilities. SUPSHIPs providing repair and modernization support to ships after delivery to the Fleet must familiarize themselves with the applicable volumes of the JFMM. These include:

Volume I	New Construction (Focus on Fleet-user perspective on New Construction & PSAs)
Volume II	Integrated Fleet Maintenance (FMP, CNO availabilities)
Volume III	Deployed Fleet Maintenance (Overseas maintenance and voyage repairs)
Volume IV	Tests and Inspections (System/component maintenance assessments)
Volume V	Quality Maintenance (Intermediate and Organizational level QA requirements)
Volume VI	Maintenance Programs (Formalized maintenance programs)
Volume VII	Contracted Ship Maintenance (SUPSHIP-like work performed by RMCs)

Although Volume I addresses New Construction through the PSA, it is primarily concerned with the processes that the potential Fleet Users should be familiar with as the pre-commissioning crew takes responsibility for operation of the ship or submarine. Volumes 2 and 7 are generally of greater interest to SUPSHIPs involved with planning or executing CNO availabilities or other maintenance and modernization work on commissioned ships and submarines. Volume 2 provides policy and guidance on the planning and preparations for this work, while Volume 7, which is largely based on the ship repair content of the previous edition of the SOM, addresses all aspects of performing this work in the private sector.

5.8.4 SUPSHIP as Naval Supervising Authority (NSA)

JFMM Volume 1, paragraph 2.4, addresses the actions related to the fleet that are required of the Supervising Activity during new construction. JFMM Volume II, Chapter 2, paragraph 2.1.1, states that the NSA is the Navy activity responsible for the oversight and verification of work being accomplished on U.S. Naval ships and identifies the assigned NSA in table 2.1. The NSA must be a NAVSEA Technical Warrant Holder and will ensure that all work under their cognizance is authorized and completed in compliance with applicable technical requirements and maintenance and modernization policy. Additionally, the NSA is responsible for all work accomplished by all activities and acts as the single point of contact. These responsibilities include:

- Coordination with other maintenance activities (e.g., Naval Shipyard, SUPSHIP, RMC, AIT).
- Single point of contact for the Lead Maintenance Activity (see JFMM 2.1.1) and ship's force.
- Collects all necessary paperwork to document the completion of milestones, key events, end of availability, and availability departure report.

In accordance with this guidance, a SUPSHIP may be designated as the NSA for a specific availability or may be tasked to support a Naval Shipyard or RMC who is the designated NSA. SUPSHIPs may remain the NSA for Post Shakedown Availabilities (PSAs), or fill a support role to another NSA where repair work and in some cases alterations may be accomplished concurrently with any guarantee or deferred work from the construction phase. Additionally, SUPSHIPs are the designated NSA for all availabilities occurring in the contractor shipyards for which they have CAS cognizance.

5.8.5 Fleet Modernization Program (FMP)

The JFMM Volume II, Part 1 Chapter 2, paragraph 2.6, provides information on the FMP processes used by NAVSEA and the Fleet. Complete FMP information is available in the Fleet Modernization Program Manual.

5.8.6 Planning Yard (PY) and Configuration Data Manager (CDM)

In the final construction phase, NAVSEA designates a Planning Yard (PY) that is responsible to NAVSEA for technical support and engineering in the development of alterations, and for support to the Naval Supervising Authority (NSA) during alteration installations or configuration changes in maintenance and modernization availabilities. The assigned Planning Yard may be either a Government activity (e.g., naval shipyard) or a private contractor (typically one of the building yards for the class). NAVSEA, in designating the Planning Yard, also assigns responsibility for life cycle management as the Configuration Data Manager (CDM) for an assigned ship class who in turn works with the ships PM and the

FMP. In some cases, Fleet Technical Support Centers within the RMCs may perform as CDM.

The assigned Planning Yard for each ship class is the engineering design agent for alterations. All proposed configuration changes must be evaluated by the assigned CDM who analyzes the potential impact that the alteration will have on the ship's configuration. The CDM assists the PM in the modernization planning and post installation data collection to ensure that all pertinent information is incorporated into each specific ship's configuration database. Specifically, the PY when tasked by the PM, conducts ship checks, prepares detailed drawings, validates the entire alteration package, and provides on-site liaison to the NSA during availability execution.

When a contractor is assigned as the Planning Yard, the SUPSHIP with cognizance of that contractor is required to perform technical and CAS services for that Planning Yard contract. In such case, the SUPSHIP will:

a. request appropriate funding

b. support issuance of contract modifications as required

c. ensure that the required products (CDRLS, drawings, material, etc.) are clearly defined

d. review or ensure that contract products from the PY are technically acceptable

e. support direct contractor support to Fleet Units, the Fleet maintenance activities, and other organizations involved in Fleet maintenance and modernization

f. oversee the purchase of material by the contractor functioning as the Planning Yard

g. participate in Quarterly Program Reviews and provide the Government's evaluation of the contractor's performance as a Planning Yard for the Award Fee Board

5.9 American Bureau of Shipping (ABS) Liaison

For some programs, American Bureau of Shipping (ABS) personnel may be tasked with classifying Navy ships or construction support barges. The American Bureau of Shipping (ABS) is a non-profit organization that has developed technical specifications, or "Rules", that are used to classify commercial vessels. The Rules address the integrity and adequacy of the design and construction of sea going vessels. When requested, ABS provides naval architectural and engineering expertise to support the in-process design effort, reviewing drawings and engineering data to ensure the design is in compliance with the Rules.

Through a partnership with NAVSEA, ABS has developed a set of Naval Vessel Rules (NVR) to support the design and acquisition of Naval Combatant Ships and Craft. When invoked by NAVSEA and the PEO/PM, the Naval Vessel Rules form the technical basis for design and

construction of the hull structure and systems covered by the NVR. The details of ABS interface with SUPSHIP will be documented and approved by NAVSEA 04 prior to start of construction on any project.

ABS surveyors may be utilized to perform on-site observations of production work, ensuring the contractor's construction is in compliance with the Rules. At the conclusion of the construction and upon delivery, assuming the contractor has met the requirements of the Rules, ABS issues a Certificate of Classification for the ship.

The Navy Vessel Rules, as applied to the construction of the Littoral Combat Ships (LCS), are separate and distinct from the long-standing ABS Steel Vessel Rules that are applied to the design and construction of vessels that will be utilized for commercial purposes and manned by civilian mariners. The steel vessel rules are often made applicable to ships that are designed and constructed for use by MSC.

Appendix 5-A

DEPARTMENT OF THE NAVY
NAVAL SEA SYSTEMS COMMAND
1333 ISAAC HULL AVE SE
WASHINGTON NAVY YARD DC 20376-0001

In Reply to
5000
Ser 04Z/055
5 May 08

From: Commander, Naval Sea Systems Command
To: Supervisor of Shipbuilding, Conversion & Repair, Bath, ME
Supervisor of Shipbuilding, Conversion & Repair, Groton, CT
Supervisor of Shipbuilding, Conversion & Repair, Newport News, VA
Supervisor of Shipbuilding, Conversion & Repair, Gulf Coast, Pascagoula, MS

Subj: SUPSHIP METHODOLOGY FOR PHYSICALLY PROGRESSING U.S. NAVY SHIPS

Encl: (1) Revised SUPSHIP Operations Manual Chapter 5.5 "Production Surveillance and Progressing"

1. Senior Navy leadership has expressed concern regarding the different processes the SUPSHIPs utilize for physically progressing Navy Ships; specifically, whether a certain contractor might be overpaid relative to the real physical progress of construction completion. This concern raised some additional issues regarding consistency of physical progressing across all SUPSHIPs, contracts and contractors.

2. The SUPSHIP community developed enclosure (1) to address this concern with a standard methodology for determining overall physical progress of Navy Ships under New Construction. This procedure is to be implemented immediately. The procedure addresses auditing of the contractor's progressing system, independently assessing the contractor's physical progress and adjudication of differences between government and contractor progress numbers.

3. Enclosure (1) will be officially disseminated in the new release of the SUPSHIP Operations Manual. SUPSHIPs should develop local procedures to ensure consistent application across all construction contracts.

M. A. HUGEL
By direction

Copy to:
PEO Carriers
PEO Ships
PEO Subs
SEA 02
SEA 04Z